

**NATIONAL GUARD AND RESERVE EQUIPMENT  
REPORT FOR FISCAL YEAR 2004**

**(NGRER FY 2004)**

**(In Accordance with Title 10, United States Code, Section 10541)**

**February 2003**

**Prepared by  
Department of Defense  
Office Assistant Secretary of Defense for Reserve Affairs  
(Materiel and Facilities)**

**Colonel Bette R. Sayre, Editor  
Washington, DC 20301-1500**





RESERVE AFFAIRS

ASSISTANT SECRETARY OF DEFENSE  
1500 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1500

FOREWORD

The National Military Strategy requires the United States military forces to sustain a high degree of Readiness to be able to deploy anywhere around the globe. This strategy requires our Reserve components to support multiple missions across the continuum of military operations. The National Military Strategy also demands a capabilities-based military force that is ready to respond at a moment's notice. The events and aftermath of September 11, 2001, and the prosecution of the current Global War on Terrorism, exemplify this need.

Properly equipping the Reserve components (RC) with compatible, interoperable, and up-to-date equipment is vital to the success of our defense strategy. The Department of Defense's "First-to-Fight, First-to-Equip" policy, which currently underlies equipment distribution policy, mandates that equipment be provided to units commensurate with their planned wartime deployment. The prosecution of the Global War on Terrorism, and responding to contingency operations has caused the National Guard and Reserve Forces to be called upon more frequently in recent history. Therefore, it is prudent to continuously evaluate our policy in light of changing roles and missions, potential future utilization, and existing equipment priorities relating to the Reserve components.

In response to Congressional reporting requirements identified in Title 10, United States Code, Section 10541, the National Guard and Reserve Equipment Report (NGRER) describes the individual plans of each Military Service and the United States Coast Guard to meet the RC equipment requirements in support of the National Military Strategy. The report is designed to answer the question: How well are the Reserve components equipped to meet current and future mobilization requirements?

Chapter One of this report is an overview of the state of Reserve component equipment readiness and provides an analysis of key issues, including equipment availability, equipment shortages, procurement plans to fill shortages, transformation, and compatibility and interoperability issues affecting the Reserve components. Chapters Two through Six provide detailed narratives and data tables for fiscal year 2004, and projected data for fiscal years through 2006. The narratives describe the Service and individual Reserve components' equipment plans for a capabilities-based force.

The National Guard and Reserve Equipment Report demonstrates the effort needed to integrate the Reserve components into their Services' equipping plans and programs to achieve a capabilities based force. The goal is to build a Reserve force that is compatible and interoperable with the Active components now and in the future.

Sincerely,

T. F. Hall







## **Table of Contents**

### **Introduction**

I.	Report Requirements	1
II.	Report Objective	2
III.	Report Contents	3
IV.	Equipment Substitution	3
V.	Terminology and Definitions	3
VI.	Data Table Explanations	4

### **Chapter 1 Analysis and Overview**

I.	Scope of Report	1-1
II.	Long Term Equipping Strategy	1-2
III.	Equipment Availability to Meet Mobilization Requirements for FY 2006	1-3
IV.	Equipment Shortages	1-4
V.	Equipment Procurements Programmed to Fill Current Equipment Shortages	1-5
VI.	Status of Current Reserve Component Equipment	1-7
VII.	Compatibility and Interoperability	1-9
VIII.	Summary and Conclusions	1-9

### **Chapter 2 United States Army Reserve Components**

I.	Army Overview	2-1
	a) Overall Army-wide Planning Guidance	2-1
	b) Army Equipping Policy	2-2
	c) Army Plan to Fill Mobilization Shortages in the RC	2-2
	d) Current Army Initiatives Affecting RC Equipment	2-3
	(1) Anti-terrorism	2-3
	(2) Army Transformation	2-3
	(3) Recapitalization	2-6
	(4) Modernization	2-7
	(5) Multi-Component Units (MCU)	2-7
	(6) Army National Guard Division Redesign	2-7
	(7) Homeland Defense	2-8
	e) Army Plan to Achieve Full Compatibility between AC and RC	2-8
	f) Equipment on Hand (EOH) Substitutes	2-8
	g) Summary and Conclusions	2-9
II.	Army National Guard (ARNG) Overview	2-10
	a) Current Status of the Army National Guard	2-10
	(1) General Overview	2-10
	(2) Status of Equipment	2-11
	(a) Equipment On-hand	2-11

(b) Average Age of Major Items of Equipment	2-11
(c) Compatibility of Current Equipment with AC	2-12
(d) Maintenance Issues	2-13
(e) Modernization Programs and Shortfalls	2-13
(f) Overall Equipment Readiness	2-20
(g) Other Equipment Specific Issues	2-22
b) Changes Since Last NGRER	2-22
c) Future Years Program (BY 2004 – 2006)	2-22
(1) FY 2006 Equipment Requirements	2-22
(2) Anticipated New Equipment Procurements	2-23
(3) Anticipated Transfers from AC to the ARNG	2-23
(4) Anticipated Withdrawals from the ARNG Inventory	2-23
(5) Equipment Shortages and Modernization Shortfalls at the end of FY 2006,	2-23
d) Summary/Conclusion	2-24
Table 1: ARNG Major Item Inventory and Requirements	ARNG-1-1
Table 2: ARNG Average Age of Equipment	ARNG-2-1
Table 3: ARNG Service Planned Procurements (P-1R Data)	ARNG-3-1
Table 4: ARNG National Guard and Reserve Equipment Appropriation (NGREA) Procurements	ARNG-4-1
Table 5: ARNG Projected Equipment Transfer/Withdrawal Quantities	ARNG-5-1
Table 6: ARNG FY 1999 Planned vs. Actual Procurements and Transfers	ARNG-6-1
Table 7: ARNG Major Item of Equipment Substitution List	ARNG-7-1
Table 8: ARNG Significant Major Item Shortages	ARNG-8-1
III. United States Army Reserve Overview	2-25
a) Current Status of Equipment	2-25
(1) General Overview	2-25
(2) Status of Equipment	2-26
(a) Equipment On-hand	2-26
(b) Average Age of Major Items of Equipment	2-26
(c) Compatibility of Current Equipment with AC	2-26
(d) Maintenance Programs	2-27
(e) Modernization Programs and Shortfalls	2-31
(f) Overall Equipment Readiness	2-34
(g) Other Equipment Specific Issues	2-35
b) Changes Since Last NGRER	2-36
c) Future Years Program (FY 2004 – 2006)	2-37
(1) FY 2006 Equipment Requirements	2-37
(2) Anticipated New Equipment Procurements	2-37
(3) Planned Transfers from AC to RC	2-37
(4) Anticipated Withdrawals from RC Inventory	2-37
(5) Equipment Shortages and Modernization Shortfalls at the End of FY 2006	2-37

(6) Other Comments	2-38
d) Remaining Shortfalls and Unfunded Requirements	2-38
e) Summary/Conclusion	2-38
Table 1: Consolidated Major Item Inventory and Requirements	USAR-1-1
Table 2: Average Age of Equipment	USAR-2-1
Table 3: Service Planned Procurements (P-1R Data)	USAR-3-1
Table 4: National Guard and Reserve Equipment Appropriation (NGREA) Procurements	USAR-4-1
Table 5: Projected Equipment Transfer/Withdrawal Quantities	USAR-5-1
Table 6: FY 2000 Planned vs. Actual Procurements and Transfers	USAR-6-1
Table 7: Major Item of Equipment Substitution List	USAR-7-1
Table 8: Significant Major Item Shortages	USAR-8-1

### **Chapter 3 United States Marine Corps Reserve**

I. Marine Corps Overview	3-1
a) Overall Marine Corps-wide Planning Guidance	3-1
b) Marine-wide Equipping Policy	3-2
c) Marine Corps Plan to Fill Mobilization Shortages in the RC	3-2
d) Current Marine Corps Initiatives Affecting RC Equipment	3-3
e) Marine Corps Plan to Achieve Full Compatibility between AC and RC	3-4
f) Other Marine Corps Specific Issues and Initiatives	3-5
II. Marine Corps Reserve Overview	3-6
a) Current Status of the United States Marine Corps Reserve	3-6
(1) General Overview	3-6
(2) Status of Equipment	3-7
(a) Equipment On-hand	3-7
(b) Average Age of Major Items of Equipment	3-7
(c) Compatibility of Current Equipment with AC	3-8
(d) Maintenance Issues/Programs	3-8
(e) Modernization Programs and Shortfalls	3-9
(f) Overall Equipment Readiness	3-11
b) Changes Since Last NGRER	3-13
c) Future Years Program (FY 2004 – 2006)	3-13
(1) FY 2006 Equipment Requirements	3-13
(2) Anticipated New Equipment Procurements	3-14
(3) Anticipated Transfers from AC to RC	3-15
(4) Anticipated Withdrawals from RC Inventory	3-15
(5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2006	3-16
d) Summary/Conclusion	3-16

Table 1: USMCR Consolidated Major Item Inventory Requirements	USMCR-1-1
---	-----------

Table 2: USMCR Average Age of Equipment	USMCR-2-1
Table 3: USMCR Service Planned Procurements (P-1R Data)	USMCR-3-1
Table 4: USMCR National Guard and Reserve Equipment Appropriation (NGREA) Procurements	USMCR-4-1
Table 5: USMCR Projected Equipment Transfer/Withdrawal Quantities	USMCR-5-1
Table 6: USMCR FY 1999 Planned vs. Actual Procurements and Transfers	USMCR-6-1
Table 7: USMCR Major Items Substitution List	USMCR-7-1
Table 8: USMCR Significant Major Item Shortages	USMCR-8-1

## **Chapter 4 United States Naval Reserve**

I. United States Navy Overview	4-1
a) Overall Navy-wide Planning Guidance	4-1
b) Navy-wide Equipping Policy	4-1
c) Navy Plan to Fill Mobilization Requirements	4-2
d) Current Navy Initiatives Affecting Naval Reserve Equipment	4-3
e) Navy Plan to Achieve Full Compatibility between Active and Reserve Components	4-3
II. Naval Reserve Overview	4-5
a) Current Status of the Reserve component	4-5
(1) General Overview	4-5
(2) Status of Equipment	4-9
(a) Equipment On-hand	4-9
(b) Average Age of Major Items of Equipment	4-9
(c) Compatibility of Current Equipment with AC	4-10
(d) Maintenance Issues	4-10
(e) Modernization Programs and Shortfalls	4-10
b) Changes Since Last NGRER	4-10
c) Future Years Program (BY 2004 – BY 2006)	4-10
(1) FY 2006 Equipment Requirements	4-10
(2) Anticipated New Equipment Procurements	4-11
(3) Equipment Transfers to the Naval Reserve	4-11
(4) Anticipated Withdrawals from Naval Reserve Inventory	4-11

(5) Equipment Shortages and Modernization Shortfalls at the End of FY 2006	4-11
d) Summary/Conclusion	4-11
Table 1: USNR Consolidated Major Item Inventory and Requirements	USNR-1-1
Table 2: USNR Average Age of Equipment	USNR-2-1
Table 3: USNR Service Planned Procurements (P-1R Data)	USNR-3-1
Table 4: USNR National Guard and Reserve Equipment Appropriation (NGREA) Procurements	USNR-4-1
Table 5: USNR Projected Equipment Transfer/Withdrawal Quantities	USNR-5-1
Table 6: USNR FY 1999 Planned vs. Actual Procurements and Transfers	USNR-6-1
Table 7: USNR Major Item of Equipment Substitution List	USNR-7-1
Table 8: USNR Significant Major Item Shortages	USNR-8-1

## **Chapter 5 United States Air Reserve Components**

I. Air Force Overview	5-1
a) Overall Air Force-wide Planning Guidance	5-1
b) Air Force-wide Equipping Policy	5-1
c) Service Plan to Fill Mobilization Shortages in the ARC	5-2
d) Current Service Initiatives Affecting RC Equipment	5-2
e) Service Plan to Achieve Full Compatibility between AC and RC	5-5
II. Air National Guard Overview	5-6
a) Current Status of the ANG	5-6
(1) General Overview	5-6
(2) Status of Equipment	5-8
(a) Equipment On-hand	5-8
(b) Average Age of Major Items of Equipment	5-17
(c) Compatibility of Current Equipment with AC	5-17
(d) Maintenance Issues	5-18
(e) Modernization Programs and Shortfalls	5-19
(f) Overall Equipment Readiness	5-22
(g) Other Equipment Specific Issues	5-22
b) Changes Since Last NGRER	5-27
c) Future Years Program (FY 2004 – 2006)	5-27
(1) FY 2006 Equipment Requirements	5-27
(2) Anticipated New Equipment Procurements	5-28
(3) Anticipated Transfers from AC to RC	5-29
(4) Anticipated Withdrawals from RC Inventory	5-30
(5) Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2006	5-30
(6) Other Comments	5-35
d) Summary/Conclusion	5-36
Table 1: ANG Consolidated Major Item Inventory and Requirements	ANG-1-1

Table 2: ANG Average Age of Equipment	ANG-2-1
Table 3: ANG Service Planned Procurements (P-1R Data)	ANG-3-1
Table 4: ANG National Guard and Reserve Equipment Appropriation (NGREA) Procurements	ANG 4-1
Table 5: ANG Projected Equipment Transfer/Withdrawal Quantities	ANG-5-1
Table 6: ANG FY 1999 Planned vs. Actual Procurements and Transfers	ANG-6-1
Table 7: ANG Major Item of Equipment Substitution List	ANG-7-1
Table 8: ANG Significant Major Item Shortages	ANG-8-1
 III. Air Force Reserve Command Overview	 5-37
a) Current Status of the AFRC	5-37
(1) General Overview	5-37
(2) Status of Equipment	5-37
(a) Equipment On-hand	5-37
(b) Average Age of Current Equipment	5-43
(c) Compatibility of Current Equipment	5-43
(d) Maintenance Issues	5-43
(e) Modernization Programs and Shortfalls	5-44
(f) Overall Equipment Readiness	5-45
b) Changes Since Last NGRER	5-47
c) Future Years Program (FY 2004 – 2006)	5-47
(1) FY 2006 Equipment Requirements	5-47
(2) Anticipated New Equipment Procurements	5-49
(3) Anticipated Transfers and Withdrawals from AC to RC	5-49
(4) Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2006, and the Effects on Overall Equipment Readiness	5-49
d) Summary/Conclusion	5-50
 Table 1: AFRC Consolidated Major Item Inventory and Requirements	 AFRC-1-1
Table 2: AFRC Average Age of Equipment	AFRC-2-1
Table 3: AFRC Service Planned Procurements (P-1R Data)	AFRC-3-1
Table 4: AFRC National Guard and Reserve Equipment Appropriation (NGREA) Procurements	AFRC-4-1
Table 5: AFRC Projected Equipment Transfer/Withdrawal Quantities	AFRC-5-1
Table 6: AFRC FY 1999 Planned vs. Actual Procurements and Transfers	AFRC-6-1
Table 7: AFRC Major Item of Equipment Substitution List	AFRC-7-1
Table 8: AFRC Significant Major Item Shortages	AFRC-8-1

## **Chapter 6 United States Coast Guard Reserve**

I. Coast Guard Overview	6-1
a) Overall Coast Guard-wide Planning Guidance	6-1
b) Equipping Policy for the Coast Guard Reserve	6-1
c) Plan to Fill Mobilization Shortages	6-2
d) Current Coast Guard Initiatives Affecting RC Equipment	6-2

e) Plan to Achieve Compatibility with AC	6-3
II. Coast Guard Reserve Overview	6-4
a) Current Status of the Coast Guard Reserve	6-4
b) Major Changes Since Last NGRER	6-5
c) Future Years Program FY 2003-FY 2005	6-5
d) Shortfalls	6-7
e) Summary/Conclusion	6-8
Table 1: USCGR Consolidated Major Item Inventory and Requirements	USCGR-1-1
Table 2: USCGR Average Age of Equipment	USCGR-2-1
Table 3: USCGR Service Planned Procurements	USCGR-3-1
Table 4: USCGR National Guard and Reserve Equipment Appropriation (NGREA) Procurements	USCGR-4-1
Table 5: USCGR Projected Equipment Transfer/Withdrawal Quantities	USCGR-5-1
Table 6: USCGR FY 1999 Planned vs. Actual Procurements and Transfers	USCGR-6-1
Table 7: USCGR Major Item of Equipment Substitution List	USCGR-7-1
Table 8: USCGR Significant Major Item Shortages	USCGR-8-1
Appendix A: Program Points of Contact	A-1
Appendix B: Acronym Glossary	B-1





## Introduction

### I. Report Requirements

a) Overview of Statutory Requirement: The Department of Defense (DOD) Authorization Act of 1982 (Public Law 97-86) established the requirement for DOD to provide an annual report to the Congress, by February 15th of each year, on the status of National Guard and Reserve equipment; hereafter referred to as the National Guard and Reserve Equipment Report (NGRER). The Goldwater-Nichols DOD Reorganization Act of 1986 amended Title 10 of the US Code placing the reporting requirement under Section 115(b). The Congress in Public Law 103-337 transferred reporting requirements to a new Subtitle E, Reserve Components (RC), Part 1, Chapter 1013, which was re-designated Section 10541. Finally, in compliance with the FY 1993 National Defense Authorization Act, Section 1134, Title XI, the NGRER was expanded to include a description of the current status of equipment incompatibility between the Active (AC) and Reserve components, the effect of that level of incompatibility, and the plan to achieve full compatibility.

This report is prepared by the Office of the Assistant Secretary of Defense for Reserve Affairs with the assistance of the Department of the Army, the Department of the Navy, the Department of the Air Force, and the Department of Transportation (US Coast Guard).

b) Current Law: The section below is an excerpt from Title 10, United States Code, Section 10541.

#### National Guard and Reserve Component Equipment: Annual Report to Congress

*(a) The Secretary of Defense shall submit to the Congress each year, not later than February 15, a written report concerning the equipment of the National Guard and the reserve components of the armed forces for each of the three succeeding fiscal years.*

*(b) Each report under this section shall include the following:*

*(1) Recommendations as to the type and quantity of each major item of equipment which should be in the inventory of the Selected Reserve of the Ready Reserve of each reserve component of the armed forces.*

*(2) A statement of the quantity and average age of each type of major item of equipment which is expected to be physically available in the inventory of the Selected Reserve of the Ready Reserve of each reserve component as of the beginning of each fiscal year covered by the report.*

*(3) A statement of the quantity and cost of each type of major item of equipment which is expected to be procured for the Selective Reserve of the Ready Reserve of each reserve component from commercial sources or to be transferred to each such Selected Reserve from the active-duty components of the armed forces.*

*(4) A statement of the quantity of each type of major item of equipment which is expected to be retired, decommissioned, transferred, or otherwise removed from the physical inventory of the Selected Reserve of the Ready Reserve of each reserve component and the plans for replacement of that equipment.*

*(5) A listing of each major item of equipment required by the Selected Reserve of the Ready Reserve of each reserve component indicating -*

*(A) the full war-time requirement of that component for that item, shown in accordance with deployment schedules and requirements over successive 30-day periods following mobilization;*

(B) the number of each such item in the inventory of the component;  
 (C) a separate listing of each such item in the inventory that is a deployable item and is not the most desired item;  
 (D) the number of each such item projected to be in the inventory at the end of the third succeeding fiscal year; and  
 (E) the number of non deployable items in the inventory as a substitute for a required major item of equipment.

(6) A narrative explanation of the plan of the Secretary concerned to provide equipment needed to fill the war-time requirement for each major item of equipment to all units of the Selected Reserve, including an explanation of the plan to equip units of the Selected Reserve that are short of major items of equipment at the outset of war.

(7) For each item of major equipment reported under paragraph (3) in a report for one of the three previous years under this section as an item expected to be procured for the Selected Reserve or to be transferred to the Selected Reserve, the quantity of such equipment actually procured for or transferred to the Selected Reserve.

(8) A statement of the current status of the compatibility of equipment between the Army reserve components and active forces of the Army, the effect of that level of incompatibility on combat effectiveness, and a plan to achieve full equipment compatibility.

(c) Each report under this section shall be expressed in the same format and with the same level of detail as the information presented in the annual Future Years Defense Program Procurement Annex prepared by the Department of Defense.

## II. Report Objective

Based upon the law, the Office of the Assistant Secretary of Defense for Reserve Affairs (Materiel & Facilities), with concurrence from all Services, has identified the following objectives:

- Provide the Services' plan to equip their Reserve forces in a time of constrained DOD budgets.
- Concentrate on fiscal years 2004 to 2006 RC requirements, procurements and changes.
- Provide an overview of current RC equipment from three perspectives:
  - current status of equipment on-hand
  - future year equipment procurements for FY 2004 - FY 2006
  - remaining shortfall for FY 2007 and beyond.
- Focus primarily on major items of equipment, which include aircraft, tanks, ships, trucks, engineer equipment and major items of support equipment. These items normally will include large dollar-value requirements, critical RC shortages, Service and National Guard & Reserve Equipment Appropriations (NGREA) procured items, and any RC specific item, which the Chief of the specific RC wishes to highlight.

### III. Report Contents

a) Report Introduction / Overview and Analysis (Chapter 1): The Introduction provides an overview of statutory requirements, report objectives, and terminology. The Overview and Analysis presents a composite Department of Defense perspective on National Guard and Reserve equipment and serves as the executive summary of the report.

b) Service Narratives and Data Tables (Chapters 2-6): Chapters 2 through 6 present the status of each Service and their respective RCs in terms of RC equipping policies and methodologies. Each chapter contains a Service and RC overview, and includes a discussion of current equipment status, future equipment procurements, and remaining shortfalls and unfunded requirements. Each chapter includes a review of the current status of equipment compatibility and interoperability between the AC and the RC of each Service, the effect of that level of compatibility/interoperability, and a plan to achieve full compatibility/interoperability.

RC data tables for each Service contain specific information on major items of equipment selected for review in this report and are placed at the end of each RC narrative section. The NGRER articulates data in eight tables (*Tables 1-8*) for each RC. In a situation where data tables are not applicable to a particular RC, a blank page has been inserted to note that table data is not applicable. The "Data Table Explanation" at the end of this section defines the data contained in *Tables 1-8*.

### IV. Equipment Substitution

If an on-hand item of equipment is to be employed in lieu of the required item in wartime (due to an equipment density shortfall of the required item), the on-hand item is classified as a "substitute item" and is reported as such in *Table 7: Major Item of Equipment Substitution List*, located at the end of each RC narrative. An item in a Service's data table, which is used as a substitute item, may not show a requirement for those quantities of the item which are considered substitutes. The requirement, in this case, is reported against the "preferred" item.

### V. Terminology and Definitions

Major Items of Equipment include aircraft, tanks, ships, trucks, engineer equipment and major items of support equipment. These items normally will include large dollar-value requirements, critical RC shortages, Service and National Guard & Reserve Equipment Appropriation (NGREA) procured items, and any RC specific item which the Chief of the specific RC wishes to highlight.

Required Quantity is the total number of an item required to be on-hand or available to RC units to go to war and accomplish their mission(s). This includes requirements for war reserve and other stocks. The simplified term "requirement," as used in this report, is synonymous with "full wartime requirement," and satisfies the requirement in Title 10 to provide a "recommendation" as to the type and quantity of equipment needed in RC inventories.

On-Hand Quantity is the equipment physically on-hand in RC or AC units or in war reserve and other stocks specifically designed for wartime use by the RC or AC.

Deployable Item is an item which, considering its suitability, operability, compatibility and supportability, will provide an expected degree of mission success sufficient to warrant its wartime operational employment.

Compatibility/Interoperability denotes the capability of two items of equipment to operate together in the same environment without interfering with one another and without degrading function or unit capability.

Substitute Item is not the most desired item but based upon its capability can be employed in wartime in lieu of a combat essential required item of equipment. It may not function at the same level of capability as the item in the AC for which it is the substitute.

Equipment Shortage (Shortfall) is the difference between the quantity required and the quantity on-hand, excluding substitute items and excess quantities beyond the required quantity.

Modernization Shortfall is the difference between the required quantity of the most modern item and the on-hand quantity of that item. Modernization shortfalls are not necessarily equipment shortages as most Services substitute older versions of an item for the most modern item. Therefore, modernization shortfalls are shortages of the most modern item only, and can have a deleterious effect upon compatibility and interoperability.

## VI. Data Table Explanations

a) A separate set of Data Tables (*Tables 1-8*) is provided in Chapters 2 through 6 for each RC. These tables contain the required information relative to major items of equipment identified in the report. The following list identifies the separate data tables that are included in the report for each RC. (Note: Some tables may not be applicable for all RCs.)

- Table 1: Major Item Inventory and Requirements (This is an all-inclusive table while other tables are subsets of *Table 1*.)
- Table 2: Average Age of Equipment
- Table 3: Service Planned Procurements (P-1R Data)
- Table 4: NGREA Planned Procurements (FY 2001 – FY 2003)
- Table 5: Projected Equipment Transfers and Withdrawals
- Table 6: FY 2000 Planned vs. Actual Procurements and Transfers
- Table 7: Major Item of Equipment Substitution List
- Table 8: Significant Major Item Shortages

b) The following paragraphs provide an explanation of the data table columns and data criteria by Table.

**Table 1: Major Item of Equipment Inventory.** This table provides a comprehensive list of selected major items of equipment the RC chooses to highlight, by providing key administrative data, on-hand inventories and wartime requirements.

Reserve Component (RC) is the specific Reserve or National Guard entity, i.e. Army National Guard (ARNG), US Army Reserve (USAR), US Marine Corps Reserve (USMCR), Air National Guard (ANG), US Air Force Reserve (USAFR), US Naval Reserve (USNR) and US Coast Guard Reserve (USCGR).

Nomenclature is the description or common name of the item of equipment.

Equipment Number is the individual Service equipment identification code: Line Item Number (LIN) for Army; Table of Authorized Materiel (TAM) for the Marine Corps; Equipment Cost Code (ECC) for Navy engineering items; and National Stock Number (NSN) for the Air Force.

Cost is the FY 2004 procurement cost per unit. If an item is no longer being procured, the inflation adjusted cost from the last procurement is shown. If an item is programmed for initial procurement beyond FY 2004, the data table depicts the projected unit cost at the time of procurement.

Quantity On-hand (QTY O/H) is the actual/projected item count for a particular item of equipment at a specified time.

Quantity Required (QTY REQ) is the authorized wartime requirement for a given item of equipment.

**Table 2: Average Age of Equipment.** This table is a subset of *Table 1* and highlights the average age of selected items of equipment.

Average Age is the calculated age of a given item of equipment. Since equipment is normally procured over several years, this figure provides an average age of the fleet.

**Table 3: Service Planned Procurements (P-1R).** This table highlights items of equipment which the Service intends to procure for their RCs. The source of this data is the P-1R exhibit to the President's Budget.

**Table 4: National Guard & Reserve Equipment Appropriation (NGREA) Procurements.** This table highlights the items which the RCs plan on procuring with miscellaneous National Guard & Reserve Equipment Appropriation funds. Since these funds are available for three years, this table highlights those items in the current procurement cycle.

**Table 5: Projected Equipment Transfers and Withdrawal Quantities.** This table portrays the planned equipment transfers (AC to RC), withdrawals, and decommissionings. Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the AC receives more modern equipment items. Although this table highlights a three-year

period, many Services do not know exact quantities of transfers or withdrawals until year of execution due to the uncertainty of the procurement/delivery cycle of new equipment.

**Table 6: FY 2000 Planned vs. Actual Procurements and Transfers.** This table compares what the Service planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002.

Planned Quantity is the item quantity the Service programmed to deliver to the RC as part of the budgeting process.

Actual Quantity is the item quantity the Service actually delivered or has in the procurement cycle to deliver to the RC.

**Table 7: Major Item of Equipment Substitution List.** A list of equipment authorized by the Service to be used as a substitute for a primary item of equipment. This table also identifies whether this substitute item is suitable for deployment in time of war.

Nomenclature (Required Item / Substitute Item), see *Table 1* description for nomenclature.

Equipment Number (Required Item / Substitute Item), see *Table 1* description for equipment number.

**Table 8: Significant Major Item Shortages.** The top ten items of equipment and modernization/upgrades, which are not funded in the FY 04-09 FYDP, are listed on this table in priority order. If additional funds were to become available, the RCs would apply those funds to the highest priority item on this list.

## Chapter 1

### Analysis and Overview

#### I. Scope of Report

In the past year, as a result of deployments and the Global War on Terrorism, Reserve component (RC) units and equipment have been deployed and employed with greater frequency and duration than at any time in recent history. This additional and excessive wear on equipment is straining both maintenance and procurement dollars to meet requirements for continued operations. Now, more than ever, it is incumbent upon the Services to maintain interoperability and compatibility of equipment and systems as we move from a threat-based to a capabilities-based force.

The National Guard and Reserve Equipment Report (NGRER) identifies major items of equipment in the Reserve components of each Service, including the United States Coast Guard Reserve (USCGR), which are of interest to the Department of Defense (DOD) and the Congress. Each year the Services and their Reserve components review the equipment currently in the RC inventories to determine which equipment should be included in the NGRER. Major items of equipment include aircraft, tanks, ships, trucks, engineer equipment and various items of support equipment. Data on equipment included in the report consists of large dollar-value requirements and equipment shortages, critical RC shortages, Service procurements for the RC and equipment procured with National Guard and Reserve Equipment Appropriation (NGREA) funds.

*Chart 1* below compares the number of line items of equipment included in recent NGRERs.

*Chart 1*

#### Items of Equipment Reported in the NGRER

Reserve Component	FY 1999 NGRER	FY 2000 NGRER	FY 2001 NGRER	FY 2002 NGRER	FY 2003 NGRER	FY 2004 NGRER
ARNG	358	275	168	113	113	121
USAR	298	248	239	239	271	239
USMCR	154	146	154	157	156	156
USNR	294	136	44	38	38	35
ANG	191	163	29	30	31	31
AFRC	127	121	17	16	27	27
USCGR	41	34	0	21	22	22
Total	1463	1123	651	614	658	631

Note: The USCGR included Active Coast Guard equipment prior to FY 2001. The FY 2002 and current reports focus on USCGR equipment only.

The fiscal year (FY) 2004 NGRER highlights a total of 631 lines of major equipment currently in RC inventories. This represents approximately 87% of the total dollar-value of all RC equipment requirements, and 99% of the current dollar-value of all RC equipment on hand. It is a slightly higher percentage of total equipment dollar-value compared to previous reports, and has a minimal effect on the overall equipment analysis. The items of equipment listed in this report represent a sufficient sample to draw accurate conclusions regarding the total inventory and status of RC equipment.

The analysis in this report is based primarily on dollar values, which are weighted by high dollar-value equipment items such as ships and aircraft. Procurement costs are based on the Services' official data and reflect either the latest procurement cost adjusted for inflation, or the current replacement cost. In some cases, these costs over-value older equipment being withdrawn or redistributed to the RC. However, since withdrawals consist of only a few items of equipment per Service, this does not significantly affect the overall analysis. It does, however, speak to the criticality of specific items of equipment to support a capabilities based force in the specific Service narratives.

## II. Long Term Equipping Strategy

The Assistant Secretary of Defense for Reserve Affairs developed an RC Equipping Strategy to ensure that RC units are equipped to support the National Military Strategy, to include crisis response and peacetime engagements. The long-term goal of the equipping strategy is to have the Reserve components equipped with modern, compatible equipment to enable them to do their job side-by-side with the Active components (AC) and coalition partners.

The equipping strategy is based on identifying all RC equipment requirements, using smart business practices whenever possible to resolve equipment shortfalls, and procuring new equipment only when necessary. It is of vital importance that the AC, RC and coalition partners acquire compatible and interoperable equipment. The most effective strategy appears to be that of the Marine Corps, which equips its RC in direct proportion to the size and mission of the components. In some instances, equipping the RC with the most modern equipment must be placed on hold, and the RC must maintain its legacy equipment as the Services cope with transformation.

The Reserve components utilize the Extended Service Program (ESP) or Service Life Extension Program (SLEP) extensively to rebuild existing equipment at a fraction of the cost of new procurement. For example, a tactical truck nearing the end of its mechanical and functional life gains an additional 15 years of use with this method. The ESP/SLEP initiative has been successful in quickly providing reliable equipment at significant cost savings to the Reserve components of the Army, Marine Corps, Navy, and Air Force.

In Army units, excess models of certain items of equipment have been converted to models which are in short supply. For example, heavy cargo trucks have been converted into bridge transporters. The Marine Corps has a cost-saving program to modernize



utility and attack helicopters into higher capacity systems through extensive upgrades and the application of four-blade rotors to replace the older two-blade rotor system. The Marine Corps, Navy, and Air Force routinely modify and upgrade their combat aircraft to increase capability and compatibility within Service fleets.

The Reserve components are using the latest commercial practices, such as just-in-time inventory and controlled humidity storage, to achieve efficiencies and cost savings. In other cases, commercial items are used in lieu of military-specifications, and industry sources are now rebuilding equipment and providing repair parts support. The Service narrative sections discuss further details on the use of redistributed equipment and other smart business practices.

However, we must be vigilant, that over the course of time, ESP and SLEP programs and funding are not subsumed into other projects, thereby negating the benefits of the cost savings programs. The intent of the cost avoidance measure must be maintained.

### III. Equipment Availability to Meet Mobilization Requirements for FY 2006

This report answers the question as to how well the Reserve components are equipped to meet mobilization requirements during the next three years. To evaluate this condition, Chart 2, below, provides the percentage of wartime-required equipment identified in the NGRER which is expected to be in RC inventories at the end of FY 2006. The percentages take into account new equipment deliveries through the end of FY 2006. These percentages are based upon dollar-values to assist the Department of Defense and Congress in budget preparation. They include, where appropriate, authorized substitute equipment for the Services, as this reveals a more accurate picture of equipment expected to be available to the RCs in the event of war. However, the dollar-value of excess items of equipment is not used to offset shortages of other equipment.

*Chart 2*

#### **Equipment Available to Meet FY 2006 Mobilization Requirements** (Includes Authorized Substitutes)

ARNG	85%
USAR	77%
USMCR	97%
USNR	100%
ANG	98%
AFRC	100%
USCGR	98%
<b>Overall</b>	<b>94%</b>

FY 2006 calculations are based upon *Table 1* data following each RC narrative.

The data above suggests that overall RC equipment inventories will be 94% in place to satisfy FY 2006 mobilization requirements, given delivery of planned procurements and cascaded equipment. It is an inflated average considering the difference in magnitude of equipment in some components when compared to the smaller services. However, the lower percentages in the Army Reserve and Army National Guard suggests that some RCs still have critical shortages of major equipment, especially for late-deploying combat support (CS) and combat service support (CSS) units. This fact is particularly significant in that the late-deploying CS and CSS units are often the first deployed for peacekeeping and contingency operations.

For example, one of the contributing factors to the problem for the Army is the mix of AC and RC units. As an illustration, the majority of Army logistics units are constituted in the RC. Since the AC has fewer units and less CS and CSS equipment, there are smaller numbers of that type of equipment that can cascade to the RC, thus requiring a greater portion of scarce procurement dollars should be dedicated to RC CSS at the expense AC combat units. This has not occurred, and the Army RC is struggling to maintain older, less efficient and less capable equipment at a greater cost in maintenance dollars and personnel.

The 94% projected availability in FY 2006 is very slightly lower than for FY 2005 (95%). The changes, for most Services, varied from the previous year by 4 percentage points or less. The lone exception was the Army Reserve, which is 14% less available to meet mobilization requirements based upon current equipment procurement projections. What is more significant, however, is the compatibility and interoperability of the available RC equipment with current AC equipment. Combatant Commanders cannot support the deployment of older, less efficient and less capable equipment that would require a degradation in the performance of AC equipment for the components to be truly interoperable.

#### IV. Equipment Shortages

The Reserve components provided an overall dollar-value of all required equipment shortfalls, excluding substitutes, which are highlighted in *Chart 3*, on the next page. The combined total of all these shortfalls is approximately \$16.5 billion or nearly 12% of all RC required wartime equipment. Please note this is a non-weighted statistical average, and presents a more positive picture than actually exists. It is not merely the dollar value that determines the shortage, but what equipment is not in the inventory that is critical. For example, some of the shortage in the Army Reserve components is to fund upgraded radios which are interoperable with the AC. Inability to field the newer radios has resulted in units being forced to arrive in theater without being properly trained on current equipment, and Army National Guard troops purchasing more capable radios from the Army and Air Force Exchange Service upon arrival in country. Compounding this situation is the fact that the deficit has actually increased over last year, which revealed a nearly 11% shortage for a total of just over \$15.3 billion.

Chart 3

**FY 2003 Reserve Component Equipment Shortages**  
(Excluding Substitutes)

<b>Reserve Component</b>	<b>Total Value of Equipment Requirements</b>	<b>Total Value of Equipment on Hand</b>	<b>Total Value of Equipment Shortages</b>	<b>Percent Short</b>
ARNG	39,666,680,000	28,844,823,000	10,821,857,000	27.3%
USAR	8,084,698,782	5,789,035,422	2,295,663,360	28.4%
USMCR	6,662,088,615	6,487,735,880	174,352,735	2.6%
USNR	14,671,000,000	14,364,000,000	307,000,000	2.1%
ANG	46,620,720,000	45,569,280,000	1,051,440,000	2.3%
AFRC	22,710,370,000	20,857,660,000	1,852,710,000	8.2%
USCGR	24,382,100	18,436,600	5,945,500	24.4%
<b>Total</b>	<b>\$138,439,939,497</b>	<b>\$121,930,970,902</b>	<b>\$16,508,968,595</b>	<b>11.9%</b>

V. Equipment Procurements Programmed to Fill Current Equipment Shortages

The Services program for new equipment in the President's Budget annually. The exhibit in the President's Budget that deals with RC equipment is called the P-1R. Table 3, located at the end of each RC narrative section, Chapters 2-6, depicts the programmed procurements for the FY 2004 thru FY 2006 timeframe. Equipment normally begins to arrive in the RC inventory one to two years after appropriation; consequently, the FY 2004 procurements should begin arriving in FY 2005 and FY 2006.

Service procurements in the past have not been sufficient to maintain RC equipment on-hand readiness. As a result, Congress provided additional funds, specifically for the RC, in the National Guard & Reserve Equipment Appropriation (NGREA). Table 4, located at the end of each RC narrative section, depicts specified major end items and miscellaneous equipment procurements using NGREA funds appropriated in FY 2001 thru FY 2003. Since NGREA is not budgeted by the Services, there are no figures beyond the current budget period. As with other procurements, there is a one to two year lag for the RC to receive equipment once funds are appropriated.

Chart 4, on the next page, compares funding from all sources for the RCs for FY 1997 thru FY 2003, and budget estimates for FY 2004. The annual totals show a slight overall increase from 1997. FY 2002 decreased by 6% from the previous year, while FY 2003 is 16% higher than FY 2002. Considering the increase in the Budget for FY 2003, it is apparent that the effects of September 11, 2001 on equipment use and replacement had an impact in the budget process. NGREA, a funding source the RCs had relied heavily upon in the past, had shown a significant negative shift prior to September 11<sup>th</sup>. The chart depicts that the Services have significantly increased RC procurement requests in the President's budget, in response to current world climate and most recently to the Global War on Terrorism.

Chart 4

**Reserve Component Procurement Funding Comparison**  
(\$ in Millions)

		<i>ARNG</i>	<i>USAR</i>	<i>USNR</i>	<i>USMCR</i>	<i>ANG</i>	<i>AFRC</i>	<i>Total</i>	<i>Grand Total</i>
FY 1997	President's Budget P-IR Submit	218.70	48.30	36.60	69.40	287.50	109.20	769.70	
	Congressional Adds to AC Accts for RC	74.10	0.00	45.00	0.00	100.50	165.90	385.50	
	NG&RE Procurements	100.82	113.89	199.74	102.84	216.37	39.55	773.21	
	<b>TOTAL</b>	<b>393.62</b>	<b>162.19</b>	<b>281.34</b>	<b>172.24</b>	<b>604.37</b>	<b>314.65</b>		<b>\$1,928.41</b>
FY 1998	President's Budget P-IR Submit	284.40	120.60	39.00	17.90	242.40	84.90	789.20	
	Congressional Adds to AC Accts for RC	244.00	8.00	96.90	0.00	95.10	132.85	576.85	
	NG&RE Appropriation	68.84	73.75	78.51	73.67	297.96	49.17	641.89	
	<b>TOTAL</b>	<b>597.24</b>	<b>202.35</b>	<b>214.41</b>	<b>91.57</b>	<b>635.46</b>	<b>266.92</b>		<b>\$2,007.94</b>
FY 1999	President's Budget P-IR Submit	502.60	158.10	45.40	39.93	263.26	115.04	1,124.33	
	Congressional Adds to AC Accts for RC	224.30	9.50	53.00	0.00	129.80	75.40	492.00	
	NG&RE Appropriation	20.00	20.00	60.00	20.00	212.00	20.00	352.00	
	<b>TOTAL</b>	<b>746.90</b>	<b>187.60</b>	<b>158.40</b>	<b>59.93</b>	<b>605.06</b>	<b>210.44</b>		<b>\$1,968.33</b>
FY 2000	President's Budget P-IR Submit	661.14	175.97	77.45	56.93	334.12	149.29	1,454.89	
	Congressional Adds to AC Accts for RC	267.10	12.00	35.60	2.80	270.80	17.60	605.90	
	NG&RE Appropriation	29.85	29.85	19.90	19.90	29.85	19.90	149.22	
	<b>TOTAL</b>	<b>958.08</b>	<b>217.81</b>	<b>132.94</b>	<b>79.63</b>	<b>634.77</b>	<b>186.79</b>		<b>\$2,210.02</b>
FY 2001	President's Budget P-IR Submit	884.42	174.32	34.72	43.69	326.83	127.60	1,591.58	
	Congressional Adds to AC Accts for RC	287.71	115.32	105.80	0.00	505.65	0.00	1,014.48	
	NG&RE Appropriation	49.54	4.95	4.95	4.95	29.73	4.95	99.08	
	<b>TOTAL</b>	<b>1,221.67</b>	<b>294.59</b>	<b>145.47</b>	<b>48.64</b>	<b>862.21</b>	<b>132.55</b>		<b>\$2,705.14</b>
FY 2002	President's Budget P-IR Submit	925.59	181.54	24.11	40.42	377.89	108.73	1,658.28	
	Congressional Adds to AC Accts for RC	151.14	3.50	4.50	0.00	33.40	2.00	194.54	
	NG&RE Appropriation	217.29	101.55	9.86	4.93	280.42	75.22	689.27	
	<b>TOTAL</b>	<b>1,294.03</b>	<b>286.58</b>	<b>38.47</b>	<b>45.35</b>	<b>691.71</b>	<b>185.95</b>		<b>\$2,542.09</b>
FY 2003	President's Budget P-IR Submit	1,046.30	568.00	39.50	253.70	341.70	118.60	2,367.80	
	Congressional Adds to AC Accts for RC	193.74	65.40	86.30	0.00	217.35	2.50	565.29	
	NG&RE Appropriation	29.40	9.80	9.80	9.80	29.40	9.80	98.00	
	<b>TOTAL</b>	<b>1,269.44</b>	<b>643.20</b>	<b>135.60</b>	<b>263.50</b>	<b>588.45</b>	<b>130.90</b>		<b>\$3,031.09</b>
FY 2004	President's Budget P-IR Submit	501.20	244.30	129.70	66.80	453.50	169.80	1,565.30	
	Congressional Adds to AC Accts for RC								
	NG&RE Appropriation								
	<b>TOTAL</b>	<b>501.20</b>	<b>244.30</b>	<b>129.70</b>	<b>66.80</b>	<b>453.50</b>	<b>169.80</b>		<b>1,565.30</b>
	Note 1: USNR figures include USMCR aircraft procurement funds.								
	Note 2: USMCR initial PB P-IR Submit erroneously added \$37M for Radio Systems.								
	Note 3: The above figures do not include Ammunition procured for the RC.								

Annual RC equipment procurements have not kept pace with requirements, thereby increasing the need to re-capitalize older RC equipment and modernize existing equipment. In the FY 2002 NGRER, RC equipment shortages were projected at \$10.2 billion. In the FY 2003 NGRER, the shortage was just over \$15.3 billion, more than \$5 billion higher than the previous year. This year, the shortage is projected to be more than \$16.5 billion. This increase, large in dollar-value, reflects only a 1% increase in total shortage this year compared to the total value of all equipment requirements. However, the total value of requirements decreased from \$141.7 billion in FY 2002 to \$138.4 billion in FY 2003. The fact that requirement costs are decreasing while the shortage costs are increasing highlights the fact the annual equipment procurements are not keeping pace with the need for new and more modern equipment in the RCs. Instead of improving their equipment position, the Reserve components are falling further behind in acquiring required equipment.

#### VI. Status of Current Reserve Component Equipment

An analysis of current equipment in the RC requires a look at several interrelated factors, such as age of equipment, compatibility, interoperability, maintenance, modernization shortfalls and overall equipment readiness.

Based upon the Total Force integration policy, the Reserve components have seen tremendous growth in the tempo of operations (OPTEMPO) and participation in on-going military operations. We are also experiencing a significant increase due to recent and projected mobilization for the Global War on Terrorism. This requires the RCs to deploy with key equipment or to fall-in on pre-positioned equipment. Some of the RCs, notably the USMCR, are seamlessly integrated and train on the same modern equipment as their Active component counterparts, while other RCs are struggling with compatibility and interoperability issues due to the magnitude of different types/models of equipment and cost of upgrading. The overall integration of the RC and AC is a delicate balancing act as requirements often outstrip available resources, and we can realistically expect a further increased demand on those resources.

Many of the RCs received a large portion of their equipment by cascading older equipment models from the AC to the RC. As the AC received newer and more modern equipment, the older, less efficient, and less capable equipment it replaced was transferred to the RC. This transfer, although improving equipment on-hand readiness, created a host of maintenance and compatibility issues related to equipment age and modernization. The RCs often face the dilemma of receiving the AC's most aged equipment and not having adequate resources to repair and maintain it in proper warfighting condition. In some instances, the commercial production lines to manufacture repair parts have been shut down and repair parts are simply not available. Compounding this problem is the shortfall in RC full-time manning support, notably maintenance supervisors and technicians, needed to properly inspect the aged equipment upon receipt, and to properly maintain the equipment after the transfer.

Equipment cascaded to the RCs is often at, or beyond, its original service life age at time of transfer, and requires extensive overhaul to extend its useful service life. These repair and rebuild programs are costly, and cause the RCs to expend larger proportions of their operation and maintenance dollars. In one instance, with the Army, funds which had been designated for rebuild were withdrawn on the promise of future new equipment procurement which was subsequently curtailed.

Equipment modernization is an especially important issue for the RCs. In the past, RC units have been precluded from being mobilized because they did not have the most current model of equipment. This is especially true with aircraft that employ high tech instrumentation for navigation and armament delivery. This shortage of modern equipment is characterized by the term modernization shortfall, which addresses a totally different issue from equipment on-hand shortages. The list below highlights some of the more significant modernization shortfalls identified in this report by the RCs.

#### **ARNG**

Utility Vehicles (HMMWV)  
SINCGARS  
Night Vision Goggles (PSV-7D)  
UH-60 Black Hawk Helicopter  
HEMTT's (Wrecker & Tanker)  
AFATDS  
Family of Medium Tactical Vehicles  
M871A3 Semi-Trailer 22 ½-Ton  
FAAD C2I  
M22 Chemical Alarm Detector

#### **ANG**

Precision Attack Targeting System  
F-15 Fighter Data Link  
C-5 Avionics Modernization Program  
C-141 Service Life Extension Programs  
F-16 HUD, IFF, Color Displays  
A-10 Precision Targeting Pods  
Modular Control Systems

#### **USMCR**

F/A-18A - Engineering Change Proposal (ECP) 583  
KC-130T - AMP  
F-5E/F Avionics Upgrade  
Essential Individual Equipment

#### **USCGR**

Port Security Unit Equipment  
CBR Equipment

#### **USAR**

Utility Vehicles (HMMWV)  
Family of Medium Tactical Vehicles (FMTV)  
C4I Items  
Improved High Frequency Radio (IHFR)  
Rough Terrain Container Handler (RTCH)  
Fuel System Supply Point (FSSP)  
Material Handling Equipment  
Tactical Fire Fighting Truck (TFFT)  
Biological Integrated Detection System (BIDS)

#### **AFRC**

C-5 Avionics Modernization  
F-16 Advanced Central Interfaced Unit  
F-16 Color Display Processor  
C/HC-130 Avionics Modernization  
B-52H Data Link System  
C-5 Reliability Enhancement & Re-engining  
Replacement of C-141

#### **USNR**

C-40A- replacement for C-9 aircraft  
P-3C - Update III and Anti-Surface Warfare Improvement Program (AIP)  
F/A-18A - Engineering Change Proposal (ECP) 560 D  
Expeditionary Force (NAVELSF)  
Modernization  
Mobile Inshore Undersea Warfare Surveillance Systems

Age and condition of equipment produce more than modernization shortfalls. For example, equipment, such as helicopters, trucks, armored personnel carriers and support equipment, is older, in many cases, than their pilots, drivers, and maintainers. They require considerably more maintenance and repair parts as they age. Body metal rusts out, seals begin to leak, and engines fail. Maintenance costs increase and reliability decreases. Services have programmed for replacement vehicles and upgrades, but full replacement of the RC fleets will stretch far beyond the Future Years Defense Plan (FYDP). RCs have initiated service life extension programs and partnered with industry in creative ways to leverage funding for interim solutions. In the meantime, many units must cross-level equipment in order to meet mobilization requirements for deploying units.

## VII. Compatibility and Interoperability

According to Joint definitions, interoperability is the ability of systems, units or forces to operate effectively together. Compatibility is the capability of two or more items of equipment to function in the same system or environment without mutual interference.

Department of Defense policy directs all Active and Reserve units that fight together be equipped with sufficient quantities of compatible and interoperable equipment. Measurement of compatibility between equipment items and systems forms a continuum ranging from non-interoperable and incompatible, to identical and fully interchangeable equipment. Since identical type/model/series equipment is not always affordable, the Services use a variety of approaches to increase compatibility.

Today, Active and Reserve units are generally equipped differently, even when they are organized to accomplish the same or similar combat mission. Due to the high cost of modernization, the fielding of weapon systems frequently stretches over a number of years. As a consequence, RC units are generally equipped with less modern equipment than their AC counterparts. This disparity occurs across all Services to varying degrees and raises concerns that Reserve units will experience increasing interoperability problems with their Active counterparts.

## VIII. Summary and Conclusions

As stated previously, Reserve component equipment on-hand readiness is improving. Services are programming larger portions of their procurement budgets for Reserve equipment, and integrating the Reserve components more and more into current operations, plans, and mobilizations.

Despite these improvements, the Reserve components still have challenges that interfere with being fully interoperable and compatible with their AC counterparts. Combatant commanders have stated that they are unable to support deploying units with equipment that is not compatible and interoperable with their AC units. They will not allow a degradation of current technology and capability. Modernization shortfalls and

aging equipment are a fact of life. Although cascading older equipment may be economical in the near-term, old equipment soon becomes expensive to maintain and repair, and the costs are escalating.

The RCs are expected to spend approximately \$3 billion in FY 2003, and an equivalent amount, at least, in FY 2004, for Reserve component equipment procurement, which is intended to increase their equipment on-hand readiness. However, the dollar-value of equipment shortfalls continues to rise precipitously, especially in the Army, due to the attrition of aging equipment and the influx of new equipment not yet fielded to the RCs. The combination of equipment shortfalls, interoperability and modernization requirements, and multiple-equipment-maintenance training costs will have a deleterious effect upon RC readiness and mobilization capability.



## **Chapter 2**

### **United States Army Reserve Components**

#### **I. Army Overview**

a) Overall Army-wide Planning Guidance: The strategic guidance to fight and win a wide array of potential missions is provided by the National Military Strategy (NMS). Inherent in the NMS is the integration of the Reserve components (RC) into a Total Force capable of supporting simultaneous missions across the spectrum of military operations. Properly equipping the RC with compatible, interoperable, and modernized equipment is an important part of this strategy. The Army supports this strategy through the “first to fight, first to resource” policy. This policy requires equipment be provided to units commensurate with their planned wartime deployment, regardless of component. The challenge is to modernize the RC with compatible, interoperable equipment within fiscal constraints.

Defense planning directs the Army to program sufficient forces to implement the NMS. Intrinsic in the Army's ability to support this strategic guidance is the integration of the Active component (AC) and the RC into a force capable of multiple, synchronous, and compatible missions throughout the continuum of military operations. Early access to RC combat support (CS) and combat service support (CSS) units is essential to deploy Army forces to a theater of operations and sustain the operational tempo throughout the duration and resolution of the conflict.

The Army Vision is "Soldiers on point for the Nation...Persuasive in Peace, Invincible in War." This Vision ensures that the Army fulfills its strategic responsibilities, continuously meeting the requirements of the National Security Strategy and the National Defense Strategy. The Army's Vision addresses three interwoven components: Readiness, People, and Transformation. September 11, 2001, serves to reinforce the Army Vision and to emphasize the requirement for transformation strategy. Equally paramount to its success are the pursuit of Global War on Terrorism (GWOT), a strengthened Joint Warfighting capability, the development and execution of global engagement, counter proliferation of Weapons of Mass Destruction (WMD), and increased strength of our Homeland Defense measures. Overall, the Army continues to seek innovative strategies to accelerate transformation efforts over the next several years while maintaining vital capabilities in the near term.

The Army plan places combat forces and various support units into Force Packages (FP) designed to support the warfighting requirements of the Combatant Commanders. Currently, there are four force packages (FP 1 to 4) and two associated force support packages (FSP) 1 and 2. These force packages are funded by the first-to-fight, first-to-resource methodology that prioritizes programming and resources. These force packages also drive the Department of the Army Master Priority List (DAMPL), the Army Acquisition Objective, and modernization plans.

The RC provides CS/CSS units to the areas of operations through FSPs. FSP 1 is designed to deploy and support 4  $\frac{1}{3}$  divisions, echelon above division (EAD) and echelon above corps (EAC) units for one Corps, and the support elements to open one theater. This includes those forces essential to support forcible entry operations and the Continental United States (CONUS)

support base required for mobilization and deployment. FSP 2 supports the deployment of one additional CONUS division, EAD/EAC for a second Corps, remaining theater support elements for a theater of operations, and essential theater opening elements for a possible opportunistic second theater. The remaining Reserve CS/CSS units are aligned with strategic force packages based on latest arrival date in a theater of operations.

The AC may require early access to specialized RC units for stability and support operations, for deployment and sustainment operations, and for tailored rotational contingency requirements as occurred in Bosnia and Kosovo.

The Army has three methodologies for improving equipment readiness:

- **Modernize:** Develop and/or procure new systems with improved war fighting capabilities.
- **Recapitalize:** Rebuild and selectively upgrade currently fielded systems to ensure operational readiness and “zero time/zero mile systems”. There are two programs that accomplish this--rebuild and selected upgrade. Rebuild restores the system to a like new condition in appearance, performance, and life expectancy; and inserts new technology to improve reliability and maintainability. Selected upgrade is the rebuild of a system that adds war fighting capability improvements to address capability shortfalls.
- **Maintain:** Repair or replace end items, parts, assemblies, and subassemblies that wear or break. The Army is considering a change from the three level Maintenance concept (Organizational; Intermediate; and Depot maintenance) to a two level Maintenance concept conducted at the Organizational and Depot maintenance levels.

b) Army Equipping Policy: The Army Equipping Policy (AEP), as stated in a Headquarters, Department of the Army (HQDA) memorandum, provides guidance for equipping all Army units. The AEP addresses modernization, force structure, and readiness requirements, and provides policy that guides the distribution of equipment throughout the Army.

The Army equipping goal is to provide fully equipped and modernized deployable forces capable of performing as components of a unified command or joint task force.

The AEP balances Army readiness against the needs of early deploying units by directing a two-step approach to distribution. First, the Army ensures that all readiness-reporting units have sufficient equipment to meet minimum readiness standards. Then, the Army fills unit requirements in first-to-fight/first-to-resource order in accordance with the DAMPL sequence, as amended by Army Orders of Precedence, or with an approved out of DAMPL sequence fielding to support operational requirements based on unit missions.

c) Army Plan to Fill Mobilization Shortages in the RC: During a large-scale mobilization, the Army will employ the most practical and efficient means of redistribution. This includes issue of serviceable warehouse stocks, repair of unserviceable items, procurement and substitution of commercial equipment, cross-leveling of any excess unit equipment or

equipment left behind by deploying units that acquire pre-positioned equipment. It also includes unserviceable equipment which can be repaired quickly, including depot work-in-progress, National Inventory Control Point stocks, and new procurement.

Upon mobilization notification, all Army units will update equipment on-hand data in the Army master database called the Continuing Balance System-Expanded. This data, when matched against requirements documents by Materiel Management Centers, will highlight equipment shortages and excesses. Orders for lateral transfer and materiel release orders will then be issued. Each level of command will perform redistribution from within its own resources before forwarding unfilled requirements to the next higher echelon. HQDA will issue prioritization guidance for all AC and RC units based on the needs of the Combatant Commanders, with consideration for modernization, interoperability, and readiness.

The Army's plan to fill shortages within a mobilizing unit would follow the sequence below:

- Alerted headquarters would attempt to cross level within its own units.
- Major Area Commands would attempt to locate external resources.
- Army would either release stocks from depot assets or direct distribution of assets in an out of DAMPL sequence fielding.

d) Current Army Initiatives Affecting RC Equipment: The Secretary of the Army and the Chief of Staff, Army, have restated the Army's Vision: "Soldiers on Point for the Nation, transforming the most respected Army in the world into a strategically responsive force that is dominant across the full spectrum of operations." As this vision evolves, the Army will transition to a lighter, more mobile force. As force structure, doctrine, technology, and equipment evolve in support of this vision, the strategies associated with equipping the RC will also change. Ongoing initiatives that affect the Army are listed below.

(1) **Anti-terrorism**: The Army fully committed to the GWOT, executing critical tasks at home and abroad to preserve America's safety and security. These tasks are daunting because the Army must at all times carefully balance the needs of today - the "world as it is", with the needs of tomorrow - the requirement to transform forces, capabilities, and institutions to extend America's advantages well into the future.

Since the attack on September 11, 2001, the Nation is reevaluating its requirements for both Homeland Defense and a long protracted global war on terrorism. Homeland Defense requirements are not yet fully defined and the GWOT is just starting. The Army expects to have a large role in the both Homeland Defense and the GWOT. The Army is examining what these requirements might be and expects to begin incorporating force structure changes based upon these new missions.

(2) **Army Transformation**: Army Transformation is a reality that is rapidly changing the way the Army will fight. Historically, a large percentage of the Army's combat casualties have come from making contact with the enemy prior to having a full understanding of the operational and tactical environment. Transformation will have a positive effect on the

Army's near-term strategic superiority, as well as, developing long-range solutions to continue dominance of future battlefields. With the Objective Force, the Army seeks to first gain situational understanding of the operational and tactical environment prior to employing larger forces. This will allow units to avoid initial contact until the Objective Force formations are maneuvered into position to overmatch the enemy forces, while minimizing friendly casualties. This is a revolutionary change in warfighting doctrine!

Army Transformation includes three broad vectors – the readiness of the Legacy Force, the science and technology effort to achieve the Objective Force, and the fielding of the Interim Force. It integrates transformational advancements in doctrine, training, leader development, organizations, materiel, and soldier systems while also incorporating changes in deployment, installations, sustainment, and business processes. The Army — one Army — will Transform into the Objective Force, while maintaining its nonnegotiable contract to fight and win our Nation's wars. In addition to transforming its operational forces, the Army will transform its generating forces – the Institutional Army. Studies and plans to accomplish this are well under way. For example, the Army will examine the structures of both the Training and Doctrine Command (TRADOC) and the Army Materiel Command (AMC) as part of the transformation of the Institutional Army. Since transformational change cannot be achieved on the margin of these institutions, a holistic solution must be developed to return resources to the warfighters. This will assist the Army in meeting its goal of increasing its tooth-to-tail (combat to support) ratio over this decade.

**Transformation Timeline:** Transformation to the Objective Force is a thirty-year process. As the backbone of the Objective Force, the Future Combat System acquisition timeline begins to define the initial capability for the Objective Force. The Objective Force will field an initial capability with programmed block upgrades. It is important to note that both technology and resources drive the timeline. The Army is in the process of converting six Army National Guard combat brigades to CS/CSS structure taking the Army from 74 ground combat brigades to 68. This number of combat brigades will change based on the restructuring of additional ARNG combat brigades to CS/CSS units later this decade.

The Transformation Timeline depicts the conversion of units within the current Army to Interim and Objective Forces. The Army plans to convert three legacy force brigades per year to the Objective Force beginning in FY 2012. This timeline, coupled with the number of planned brigade conversions, clearly shows the need for the Legacy Force to be the primary force that fights and wins our Nation's wars until FY 2016. At that point, the Objective Force will consist of five divisions, comprised of 15 Objective Brigade Combat Teams, and will assume the first-to-fight mission. However, the Legacy Force will still be needed to supplement the capabilities of the Objective Force until FY 2032.

**Objective Force:** The Army is transforming the world's premier land power from a Cold War Legacy Force to an Objective Force that is more responsive, agile, versatile, deployable, lethal, survivable, and sustainable -- dominant at every point on the spectrum of military operations. A force with these characteristics will have the ability to place a combat-capable unit anywhere in the world, regardless of accessibility to ports or airfields, in 96 hours, a division on the ground in 120 hours, and five divisions in theater in 30 days.

The Objective Force is the Army's ultimate transformation goal. It is a future force that achieves the characteristics described in the Army Vision. The Objective Force will be a more strategically responsive Army, capable of dominating at every point on the spectrum of operations and will be capable of rapid transition between mission requirements without loss of momentum. The Objective Force will be equipped with significantly advanced systems centered on the Future Combat System. It will be commander and execution centric—networked internally and externally through a mobile, adaptive, reliable command and control capability. It will leverage joint and interagency reachback and direct downlink capabilities for intelligence, force planning, administration, technical engineering, information operations and logistical support.

**Interim Force:** The Army has a capability gap between a fully operational Objective Force and the Legacy Force in its ability to meet operational requirements. To remedy this, the Army has funded six interim brigades that will be trained and ready to deploy to provide the Combatant Commanders with an increased land power option. Two combat brigades at Fort Lewis, WA, are currently in the process of converting to Interim / Stryker Brigade Combat Teams (I/SBCT) with the fielding of the LAV-III Interim Armored Vehicle. Additional I/SBCTs are programmed for Alaska (172<sup>nd</sup> Infantry Brigade), Louisiana (2<sup>nd</sup> Armored Cavalry Regiment), Hawaii (2<sup>nd</sup> Brigade, 25<sup>th</sup> Infantry Division) and Pennsylvania (56<sup>th</sup> Infantry Brigade, Pennsylvania ARNG). The recommendation of the Quadrennial Defense Review may result in the placement of an SBCT in Europe by FY 2007.

**Legacy Force:** The current Legacy Force must be prepared to fight and win the Nation's wars while supplementing the capabilities of the Objective Force until the transformation is complete. For this reason, the Army needs to invest in the current force, which will be with us until the Objective Force is completely fielded. However, because resources are limited and requirements are abundant, the Army has chosen to accept significant risk in its Legacy Force. This decision to accept risk is under continuous review, especially in light of the current operational environment.

**CSS Transformation:** The Army Deputy Chief of Staff, G-4 (Logistics) oversees CS/CSS Transformation within Army Transformation. The goal of Army CS/CSS Transformation is to ensure that Army forces are capable of rapidly deploying in support of current and future operational force deployment goals and can effectively support and sustain the full spectrum of Army operations, while synchronizing Army and Joint efforts to: (1) enhance Strategic Responsiveness and meet deployment timelines, (2) reduce the CS/CSS footprint in the Tactical Battle Space, and (3) reduce the cost for the generating and sustaining forces without reducing warfighting capability. Critical components of the transformation process are transformation enablers, defined as: materiel solutions; automation or communications systems; technology; business process changes; and organizational redesigns, which yield a new or enhanced capability to meet a recognized requirement.

Consistent with the Army Vision and the Army Transformation Strategy, CSS Transformation, in the long term, focuses on migration to a fully integrated information infrastructure that enables readiness-based, platform-centric logistics management on a global

basis. The key issue will be meeting the deployment milestones of the Army Vision while, at the same time, reducing both the demand for strategic lift and the logistics footprint in the tactical battle space. This will require further reengineering of business processes, improving distribution platforms, enhancing the deployment process, improving strategic and intra theater lift capabilities, and developing technologies that contribute to reduced logistics demand.

(3) **Recapitalization:** It is the current Legacy Force that guarantees the Army's near-term warfighting readiness. Since the Army skipped a procurement generation (1990s and into the 2000s), the age of many of the current force's combat systems often exceed their expected service life (20 years for most Army systems). Today, 75% of the Army's major combat platforms exceed their expected system half-life. In order to maintain operational readiness and to stabilize the growth in operating and support costs of the Army's aging weapon systems, the Army has begun to recapitalize and selectively modernize its current force.

Recapitalization is the rebuilding and selected upgrading of fielded systems to ensure operational readiness and a "zero-time, zero-miles" system. The Army Recapitalization Strategy follows two paths: rebuild and selected upgrade. Rebuild restores a system to a like new condition in appearance, performance, and life expectancy. It inserts new technology where practical to improve reliability and maintainability. The result of a Recapitalization rebuild is a system with the same model and new life. Selected upgrade rebuilds the systems and adds warfighting capability improvements that address capability shortcomings. The result of a Recapitalization selected upgrade is a system with a new model, new life, and improved warfighting capability.

When operationally necessary and financially prudent, the Army will selectively upgrade systems to maintain combat overmatch capability and a technological advantage. Recapitalization efforts will focus on improving the reliability, maintainability, safety, and efficiency of the Army's current systems at lower cost than procuring new systems. The Army's requirement to recapitalize all of its systems is significant and the requirement is clearly unaffordable given the current fiscal constraints and planning guidance. Therefore, the Army has decided to focus its resources on only those systems and units that are absolutely essential to maintaining today's warfighting readiness, while taking risk with other systems and other parts of the force. In order to develop an affordable and executable recapitalization program, the Army has prioritized seventeen of its systems that must be recapitalized (rebuilt and selectively upgraded) to a near zero-time/zero-mile standard. The "Army's Prioritized Recapitalization Program" in addition to selecting only seventeen systems also primarily focuses its resources on the Counterattack Corps.

While the recapitalization program approval process has helped the Army focus its resources, reduce requirements, and develop cost effective, funded programs, the Army must still remain cognizant of the inherent risk in this program. Even for these seventeen systems, the Army still has significant unfinanced requirements for systems that reside in other units besides the Counterattack Corps. The majority of the remaining systems will not reach an average half-life by FY 2010 and a large proportion of those systems will not be upgraded or rebuilt. As a result of its recapitalization strategy, the Army has provided critical combat capability to the Counterattack Corps, accepted prudent risk in its remaining units, and established a process that

will help free up resources for the Interim and Objective Force. The Army will continue to review the scope of its recapitalization requirements each year and make adjustments as appropriate.

(4) **Modernization:** The Army focused the modernization of its Legacy Force by identifying and prioritizing those systems that have applicability to the Objective Force. These systems can be classified into two categories: those that are part of the Legacy Force and will transition with us to the Objective Force (Family of Medium Tactical Vehicles and Javelin) and those that are being built specifically for the Objective Force, but can be used by the Legacy Force (Tactical Unmanned Aerial Vehicles and Highly Mobile Artillery System). By doing this, the Army is ensuring that its resources are efficiently spent on systems that will benefit it now and in the future. In an effort to accelerate the Transformation to the Objective Force, the Army accepted risk by focusing modernization efforts on selected units and capabilities. Only the Counterattack Corps, some XVIII Airborne Corps units, and the Interim Force will receive the system upgrades and digitization capabilities necessary to modernize to the Objective Force.

(5) **Multi-Component Units (MCU):** An MCU combines personnel and/or equipment from more than one component on a single authorization document. The intent is to maximize integration of AC and RC resources. MCUs have unity of command and control similar to that of single component units. MCU status does not change a unit's doctrinal requirement for personnel and equipment, force packaging, or tiered resourcing. No limit has been established for the number of units that may become MCUs, with the concept available to both AC and RC units. MCU selection is based on mission requirements, unique component capabilities and limitations, readiness implications, efficiencies to be gained, and the ability and willingness of each component to contribute the necessary resources.

As of November, 2000, there were 89 units identified as proposed MCUs through FY 2007. The Army Reserve will be the flag holder for 28 units and will provide elements for 44 other MCUs. The ARNG is slated to be the flag holder for three units and will provide elements for nine other MCUs. The Army Reserve and the ARNG will participate in 14 MCUs comprised of all three Army components. These numbers will change as the program continues to grow.

(6) **Army National Guard Division Redesign Study (ADRS):** The Secretary of the Army approved the ADRS four phased plan to convert up to 12 ARNG combat brigades, and slice elements (approximately 48,000 personnel) from two ARNG combat division equivalents, to required CS/CSS structure. A force feasibility review confirmed the conversions recommended by the Total Army Analysis (TAA)-07 Resourcing Conference Council of Colonels. ADRS is included in all Force Validation Committee reviews.

Approximately \$2 billion was programmed to resource Phases 1 and 2 of ADRS and they are fully funded. This will convert six ARNG combat brigades to CS/CSS units. Additional resources will be identified and applied in future budgets through FY 2009. The Army's TAA process and ongoing CS/CSS Transformation Study will determine the types and number of units available for Phases 3 and 4.

(7) **Homeland Defense:** DOD established ten 22-person Rapid Assessment and Initial Detection teams - now designated “Weapons of Mass Destruction - Civil Support Teams” (WMD-CSTs), in FY 1999. The teams provide civilian first-responders with an initial capability to conduct technical assessment of a WMD attack, determine the type and extent of the contamination involved, advise on appropriate actions and capabilities of military units that may be called in to support the response, and facilitate the integration of those follow-on units into the response effort. In FY 1999, Program Budget Decision 709 established seventeen additional teams for FY 2000 and the FY 2001 National Defense Authorization Act directed the Army to establish an additional five teams for a total of 32 WMD-CSTs. In addition to the WMD-CSTs, 27 Chemical Decontamination Companies have been equipped and trained to perform decontamination requirements within Homeland Defense missions. They are coupled with four Chemical Reconnaissance Companies equipped and trained to perform chemical reconnaissance within the domestic environment. These companies have an operational mission in CONUS, while retaining their OCONUS mission.

e) Army Plan to Achieve Full Compatibility Between AC and RC: The Army maintains a doctrinally integrated series of organizational designs for the purpose of achieving operational compatibility between types and echelons of units. Every effort is made to equip and modernize the AC and RC so that they remain an integrated team. Due to constrained resources, incremental improvements have been determined based on the first-to-fight/first-to-support principle.

The budget trend the last few years was positive because National Guard and Reserve Equipment Appropriation (NGREA) funds were used to reduce equipment shortages in high priority units when Army procurement money was unavailable. Considering the reduction in NGREA funds since 1998, the Army budgeted more in their annual budgets for the RC and Congress added more money to active accounts for RC specific equipment. Despite these increases, the RC still has significant equipment shortages, especially in the most modern equipment. Consequently, the RC must increasingly rely on limited overhaul and rebuild programs of existing equipment to retain mission capabilities. One example of this is Recapitalization.

Recapitalization may include pre-planned product improvements, extended service programs and major modifications. However, these programs alone do not constitute recapitalization unless the system is restored to a “zero time/zero mile” condition.

Since 1997, ARNG and Army Reserve procurement has been included in the Future Years Defense Program. This ensures visibility of funds for improvements in equipment compatibility between the AC and RC.

f) Equipment on Hand Substitutes: The equipment on hand in *Table 1* includes authorized substitute equipment. Substitute line item numbers (LIN) are reported as assets on-hand and are included in equipment totals for unit status reporting purposes. Army regulations define authorized substitutes as any piece of equipment that is able to perform the same function and purpose as the authorized equipment, but generally not to the same level of



performance and efficiency. If substitute items of equipment are used, they are listed along with the quantity and item substituting for the prime LIN in *Table 7*.

An authorized substitute item as on-hand equipment does not exempt the unit from placing the authorized equipment on a valid requisition. Therefore, the requirement for the authorized item is still valid. Inclusion of authorized substitutes tends to skew the shortages of primary equipment, but better depicts a more accurate equipment status of the RC. Without the use of authorized substitute equipment, the Army's equipment posture, both Active and Reserve, would be degraded.

#### g) Summary and Conclusion

The Reserve Components have been called upon to provide individuals, units, and equipment to support on-going military missions, from GWOT and Homeland Defense, to peacekeeping operations.

In preparation for a deployment, the Army cross-levels equipment, steps up training, and, in some cases, provides more modern equipment to ready the RC units. However, in efforts to meet mobilization requirements, RC units would often have to "come as they are, with no intended equipment upgrade". In other words, RC units would bring the equipment currently in their inventories. In many instances units bring significantly older equipment with reduced capability and decreased reliability to the war fight. The equipment, in many cases, is many years past its useful life, especially in the CS/CSS arena. Furthermore, repair parts inventories, which have been reduced under cost saving measures during the past several years, are no longer available for this outdated equipment.

Exacerbating the problem of RC readiness is the fact that the Reserve components are still not fully equipped to meet the readiness requirements in either the NMS, identified in 1996 by the Assistant Secretary of Defense for Reserve Affairs, or the Transformation Campaign Modernization Plan. Although the Army has made significant strides to better equip the RC, there are still significant equipment disparities between the AC and the RC. Depot maintenance accounts, which are undercapitalized at only a fraction of what is needed, intensify the difficulty the RCs experience maintaining equipment required for the Army Recapitalization program or war reserves secondary items, a prerequisite for CSS units to fulfill mission requirements. Withdrawing funds from the recapitalization program placed increased reliance and strain upon procurement dollars.

The RCs are experiencing significant difficulty in meeting requirements to modernize while maintaining compatibility and interoperability with the AC to conduct current operational requirements. Funding for CS/CSS equipment is frequently decremented in favor of combat equipment. Since both the ARNG and Army Reserve comprise a significant percentage of the Army's CS/CSS force structure, it is clear that funding for this requirement is seriously lacking.

## II. ARMY NATIONAL GUARD OVERVIEW

### a) Current Status of the Army National Guard (ARNG)

#### (1) General Overview

(a) Over the last year the Army National Guard has undergone its largest mobilization and deployment since Operation DESERT SHIELD/STORM by supporting both Homeland Defense and Outside the Continental US (OCONUS) operations. The Army has also



**(L to R) Manning a check point in the Balkans, M2 Bradley Fighting Vehicles firing TOW 2 Anti-Tank Missiles during training, and Light-Infantry Air-Assault training from a UH-60 BlackHawk**

announced its intent to terminate several equipment modernization programs that will stop short of modernizing the ARNG and funding constraints in other systems will delay fieldings geared toward the elimination of obsolete systems from the tactical wheeled fleet and other programs. A key component of Army Transformation is the recapitalization and modernization of its legacy combat force, but in almost all cases there is not adequate funding to include the ARNG. The expected cascade of equipment to fill shortages in the ARNG has not materialized to the full extent anticipated as the Army has elected to recapitalize existing equipment for its legacy force rather than procure new systems. The higher operational tempos (OPTEMPO) of the last year combined with the age of its major combat systems has challenged the ARNG support infrastructure to maintain readiness rates.



**(L to R) Airport security, Support to NY City, Fighting Forest Fires in Western United States**

(b) The Army will also field a Stryker Brigade Combat Team (SBCT) to the PA ARNG in the next five to seven years as the last Interim Combat Brigade before the Army transitions into fielding the objective force infrastructure. The remainder of the ARNG will continue to use equipment that is at or near the end of its projected service life while maintaining

a legacy force that is at least one generation behind the Active component (AC). The Army National Guard Division Redesign Study (ADRS) program that converts combat infrastructure to combat support (CS) and combat service support (CSS) units is currently in Phase I and enters Phase II in FY 2004. The program will activate these units with modern equipment and upgraded support facilities.



## (2) Status of Equipment

(a) Equipment On-Hand (EOH): ARNG mobilizations to support both Continental US (CONUS) Homeland Defense missions, OCONUS deployments, and deployments to combat training centers created some significant EOH shortage issues. Although the ARNG continues to receive new and cascaded equipment the low percentage of fill of some equipment has created challenges to meet mobilization requirements. Cross leveling within states or between states negatively impacts training and readiness and may cause a domino effect as states scramble to cover multiple requirements. Normally the equipment used to fill shortages in deploying units either cannot be back filled and/or is gone for 10 months or more. A listing of the most significant item shortages that impacted Operations ENDURING FREEDOM and NOBLE RESPONSE is shown in the chart below. The most significant modernization shortfalls are indicated on page 2-13 and also on *Table 8*.

### **Top ARNG EOH Mobilization Equipment Shortages**

<u>NOMENCLATURE</u>	<u>REQ</u>	<u>O/H</u>	<u>% FILL</u>	<u>SHORT</u>
PVS-7D NVG	155,947	42,435	27%	113,512*
SINCGARS (Ground)	61,815	35,256	57%	26,599* (1)
HMMWVs	40,065	29,295	73%	10,770*
Up-Armored HMMWVs	1,987	19	1%	1968
AGPU (2)	156	107	69%	49*
AN/AVS-6(V)3 (3)	7,500	0	0%	7,500

\* Dependent upon Congressional adds/NGREA to fill shortages.  
 (1) 7,000 due in through cascade and NGREa procurement through 03  
 (2) AGPU – Aircraft Ground Power Unit  
 (3) Older generation AN/AVS-6 Aviation night vision goggles are used as substitutes and are less effective.

(b) Average Age of Major Items of Equipment: The vast majority of the ARNG's major systems such as aircraft, combat tracked vehicles and tactical wheeled vehicles were received as cascaded systems with high mileage/high usage. Significant decrements in funding for the tactical wheeled vehicle fleet has created shortages and slowed down the pace of

eliminating obsolete equipment from the ARNG inventory. The ARNG still has several lines of equipment no longer in the active inventory, which challenges organizations to find repair parts and institutional knowledge. Additionally personnel attending MOS training are not instructed on equipment that is only found in the Reserve component (RC) inventory and they require additional training when arriving at their unit. The Army's announcement of the termination of some modernization programs will impact the ARNG in that equipment will be in use well past its normal service life. The consequence is EOH continues to age at a faster rate than modernization allows which increases maintenance costs and the technology gap with the AC. The limited modernization and availability of cascaded equipment forces the ARNG to continue operating equipment on the Army's Automatic Disposal List. Much of the cascaded equipment to the ARNG has already exceeded one-half of its economic service life (ESL) (see *Table 2* for Average Age of Equipment).

The existence of obsolete equipment places a significant restriction on logistics transformation because the support of legacy items requires additional maintenance personnel with different skill sets and a completely different set of repair parts.



Night Vision Goggles  
(AN/PVS-7D)

of Homeland Defense highlighted some of the capability difference of the ARNG units deployed to support civilian and military sites. A technology gap exists between the AC and the ARNG even though most of the ARNG equipment is considered compatible with the AC. Lower priority units mobilized for Homeland Defense were short HMMWVs, Up-Armored HMMWVs, Night Vision Devices (PVS-7D), SINCGARS radio systems, and other equipment. The states mobilizing units were forced to cross-level among its other units to provide the required equipment and were often forced to reduce the on-hand levels of high priority units to fill shortages. The ARNG is dependent upon NGREA funds to fill equipment shortages such as these. The ARNG has used NGREA over the last few years to fill equipment shortages, improve readiness, and modernize equipment. Procurements using NGREA funds during the last five years are shown at Tab A. Continued procurements using NGREA for many of these systems is expected as funds are available.



SINCGARS Radio

Older, less capable, and sometimes non-standard equipment impacts logistics in the following ways:

- The theater has to support both the older and newer generation of equipment.
- Units must stock repair parts for all systems at all levels of maintenance.
- The mix of old and new requires additional repair skills for maintenance personnel.
- Higher failure rates and repair frequencies of older systems.
- Requisitioning of parts for obsolete equipment challenge the supply system and adversely affect the readiness of units.

(d) Maintenance Issues: Continued depot maintenance funding is critical to the ARNG to maintain readiness. Currently, the ARNG depot maintenance program is funded at 73% of its total requirement for FY 2004, with possible further reductions expected. Funding for the total program increases steadily to 89% of total requirements in FY 2009.

ARNG funding for the category known as other equipment increases from \$79.8M in FY 2004 to \$179M in FY 2009. This funding level equates to an increase from 63% in FY 2004 to 88% in FY 2009. This funding supports depot maintenance of calibration, construction, engineering equipment, weapons/armament, watercraft, and maintenance of Tactical Wheeled Vehicles.

ARNG depot maintenance for aircraft is funded at 90% of requirements throughout FY 2004-2009. ARNG depot funding for communications-electronics equipment ranges from 64% in FY 2004 to 90% of requirements in FY 2009. Depot funding for combat vehicles ranges from a low of 67% of total requirements in FY 2004 to 89% in FY 2009. Depot funding for missile systems increases from 80% in FY 2004 to 90% in FY 2009.

ARNG readiness is heavily dependant on depot maintenance funding to maintain minimum readiness rates and keep equipment operating that has reached or exceeded its service life. A continued trend of under funding maintenance programs combined with a delay in providing new modernized equipment replacements will continue the decline in readiness rates. Additionally this continues to expand the technology gap between the ARNG and the AC equipment.

(e) Modernization Programs and Shortfalls: The Army has announced several program terminations, which will eliminate some projected equipment modernization for the ARNG. The impact is two fold in that the ARNG will not modernize to the same level as the AC and for certain units there could be a loss of relevancy as the capability gap increases. The ARNG's FY 2004 Top 1-25 Equipment Modernization Shortfall List is shown in the chart below. Although the program has been terminated some of the items remain on the list as critical shortfalls/modernization requirements. The ARNG has become dependent upon Congressional additions to the procurement budget to continue to fund many of its modernization programs.

#### **ARNG FY 2003 1 TO 25 Equipment Modernization Shortfall List**

	<b><u>SYSTEM</u></b>	<b><u>REQ'D</u></b>	<b><u>SHORT</u></b>	<b><u>UNIT COST</u></b>
1	HMMWV	41,654	10,488	\$77K
2	SINCGARS	96,645	19,864	\$11K
3	Night Vision Goggle (AN/PVS-7D)	201,000	156,673	\$5K
4	UH-60 Black Hawk Helicopter	685	148	\$11.2M
5	HEMTT Tanker/Wrecker	3,128	1,159	\$305K
6	Advanced Field Artillery Tactical Data System	1,773	1,083	\$225K
7	FMTV 5 Ton Truck Medium Tactical Vehicle Variant	34,287	31,673	\$150K
8	M871A3 Trailer (22 1/2 Ton Trailer)	5,057	1,923	\$40K
9	Forward Area Air Defense Artillery C2I (FAAD C2I)	18	14	\$2.5-8M



	<u>SYSTEM</u>	<u>REQ'D</u>	<u>SHORT</u>	<u>UNIT COST</u>
10	M22 Chemical Alarm Detector	19,364	19,324	\$10K
11	EPLRS (Enhanced Position Location Reporting System)	21,005	19,885	\$50K
12	M915A3 Line Haul Tractor	2,418	721	\$125K
13	M88A2 Hercules Medium Tank Recovery Vehicle	631	631	\$2.7M
14	Bradley Fighting Vehicle Series MOD (A0 TO A2ODS)	2,273	1,125	\$1.4M
15	M109A6 Paladin 155mm Self-Propelled Howitzer	522	144	\$2.18M
16	M917A1 20-Ton Dump Truck	555	413	\$192K
17	Precision Lightweight GPS Receiver (AN/PSN-11) PLGR	54,403	31,003	\$3K
18	Sentinel SHORAD Radar System	104	50	\$2.5M
19	Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T)	72	72	\$1.4M
20	Javelin	2,215	1,173	\$115K
21	Semi-Trailer M872A4 34-Ton	4,327	539	\$36K
22	Tactical Quiet Generator	9,428	3,826	\$31K
23	Meteorological Measuring Set	51	5	\$1.5M
24	Movement Tracking System	20,632	19,154	\$15K
25	Prophet	83	77	\$575k

1. Aviation: Under the Army's Aviation Transformation Plan UH-60s will cascade to the ARNG to replace the UH-1 fleet being removed from the Army inventory by FY 2004. The ARNG has retired the AH-1 Cobra Attack Helicopter which will eventually be replaced by cascading AH-64 Apache Attack Helicopters. Within the three ARNG Corps Attack battalions, AH-64D Longbow Apache models are being cascaded to replace AH-64A models. This



AH-64A Apache Attack Helicopter

is a multi-year endeavor that begins in March of FY 2003. While equipment cascade replaces aircraft it does not improve the current readiness problem in the ARNG's aviation fleet. The ARNG's legacy aircraft are one generation or more behind the AC and the funding requirements for support equipment and sets kits and outfits for cascading aircraft is coming from funding that would have supported the aircraft recapitalization program. The current Army recapitalization program will do little to improve ARNG readiness rates and the early model aircraft of the ARNG aviation fleet such as the UH-60A will need continued support until at least FY 2019.



AH-64D Longbow Apache Helicopter

### Aviation Transformation – Aircraft Cascade Problems

Support Systems and Class IX Shortages exist due to lack of procurement funding and cascading of older systems without associated items:

PUSH Packages of Class IX  
Aviation Ground Power Unit shortfalls

SINCGARS systems for aircraft shortfalls  
Shortfall in latest model Night Vision Goggles  
Aviation Intermediate Maintenance Shop Set Shortages

a. Utility Aircraft: Perhaps the greatest challenge to the ARNG aviation is the retirement of the UH-1 Huey fleet in FY 2004 and its replacement with UH-60 Blackhawks. The UH-60 over the last few years has been the top procurement priority in order to fill the shortages anticipated with the UH-1 retirement.



UH-60L BlackHawk Helicopter



BlackHawk MEDEVAC Helicopter  
(HH-60L)

b. Air Ambulance Aircraft: A shortfall will exist, however, in the air ambulance units as the Army plans to field 12 of 15 required UH-60s in each unit to replace the UH-1s for the 12 MTOE Air Ambulance units of the ARNG with a projected shortage of 36 UH-60 aircraft. Additionally to be Fully Mission Capable, Air Ambulance aircraft require Aeromedical Evacuation Kits or “Q kits” modifying them to the UH-60Q or HH-60L. The ARNG is currently projecting a shortage of 171 of these kits.

c. Cargo and Reconnaissance

Aircraft: The Army is modifying all but 96 of its CH-47D cargo aircraft fleet to the “F” model. Current projections are that the majority of the unmodified aircraft will be in the ARNG. The Army procurement objective needs to be increased to convert the entire fleet to the “F” model. Under the ARNG Aviation Transformation and Modernization Plan, reconnaissance companies come into existence. The aircraft required for these units is the RAH-66 Comanche. Current plans are for the AH-64A Apache to be placed in the six Divisional Cavalry squadrons as a fill of 16 required/8 authorized, resulting in a shortfall of 48 aircraft.



Cargo Helicopter CH-47F



M2 & M3 Bradley Fighting Vehicle

2. M1A1 Main Battle Tank and M2/3 Bradley Fighting Vehicle (BFV): The ARNG plans to continue converting their present M2A2 Bradley fleet, mainly located in the Enhanced Separate Brigades (eSB), to the ODS version. Funding for this conversion is dependent on Congressional add-ons. The Army's decision to accept risk in the modernization of the Heavy (non-digitized) Legacy force has significant impacts on modernization of

the ARNG because it will limit heavy combat maneuver platforms available for cascade to the ARNG. The ARNG will continue to replace the remaining M113A2 Armored Personnel Carriers located in the heavy Divisions with cascaded M2A2 BFV from the AC as they become available. By the end of FY 2004 one division will be complete with the BFV to include the M3A2 Cavalry (CAV) Bradley. The main objective is to have three ARNG Heavy Divisions completely fielded with M2A2 and M3A2 CAV and all eSBs completely fielded with M2ODS BFVs by the end of FY 2008. This requirement is unfunded and at risk; therefore, it will remain reliant on Congressional add-ons to modify the remaining ARNG objectives to complete the heavy configuration. The ARNG has a similar problem in that the M1A1 main battle tank in its heavy eSBs and armor battalions will not have the commonality of digital upgrades being fielded in the M1A2 to the AC.



**M1A1 Abrams Main Battle Tank**

### 3. M88 Tracked Recovery Vehicle and Armored Vehicle Launch Bridge

(AVLB): The M88A2 Hercules is the recovery vehicle for the M1A1 and M1A2 main battle tank. Army procurement of the M88A2 did not include the ARNG. The older model M88A1 is not capable of recovering the M1A1 tank due to the 70-ton weight and the ARNG has an unfunded requirement for the M88A2 Hercules and a shortage of 42 M88A1s. The AVLB is a key mobility system that allows combat units to bridge obstacles. The shortage of these systems continues to create a readiness issue for the ARNG in that it limits mobility during training. The ARNG currently has a shortage of 158 of these systems and eleven are considered too obsolete to continue to maintain. The entire fleet of 377 requires modernization to 70-ton capability to be able to handle the M1A1 70-ton tank. The Army's decision to cancel procurement for the Wolverine compounds the AVLB shortages of 143, since there is no modernization that will upgrade the ARNG nor expected cascade to fill shortages. While there is currently no procurement planned for the vehicle it would be possible to modify the bridges to 70-ton capacity.



**Hercules (M-88A2)**

### 4. Tactical and Support Vehicles

- Family of Medium Tactical Vehicles (FMTV): Fielding of these vehicles will modernize the current 2 ½-ton and 5-ton fleets for ARNG units and eliminate older models already considered obsolete by the Army. Current planning projects the Army to begin procurement of the replacement for the FMTV in FY 2009/2010 and the ARNG to receive cascaded FMTVs



**FMTV 5 Ton Cargo**



**FMTV M1088 5-Ton Tractor & Semi Trailer  
22 1/2-Ton (M-871A3)**



and be fully fielded in FMTVs by FY 2020. As one of the largest Army procurement programs for wheeled tactical vehicles, funding for this program has been frequently decremented to fund other Army priorities. One of the key transport system in the ARNG is the 5-ton tractor (M1088) and the M871A3 22-½ ton trailer. This tractor-trailer combination allows the ARNG to accomplish both state and federal missions and helps reduce operating costs of moving supplies. The Army is procuring tractors and trailers to activate 25 additional truck companies in the ARNG between FY 2001-2007. There is no planned procurement to fill existing shortages and the ARNG will continue to rely on NGREA discretionary funds to procure tractors and trailers to fill these shortages.

- **Heavy Expanded-Mobility Tactical Truck (HEMTT):** The HEMTT tactical wheeled vehicle shortage is one of the most significant shortfalls in the ARNG because there are no authorized substitutes. Five-ton cargo vehicles can be used in lieu of 10-ton HEMTTs cargoes at half the capability, which is a significant shortfall for units like the field artillery, which become dependent on outside assistance to haul their ammunition basic load. For vehicle recovery operations the 5-ton wrecker cannot fulfill a mission for which a 10-ton HEMTT wrecker is required. Not only does this shortfall create a capability shortfall but it also can present significant safety concerns in many situations. The HEMTT fueler has significant applications to the air and ground support missions and does not have an authorized substitute. The ARNG over the last few years has relied on Congressional adds in the form of discretionary funds (NGREA) to procure HEMTTs to fill shortages.



**HEMTT**

### **ARNG HEMTT Shortages**

	<b><u>REQ</u></b>	<b><u>O/H</u></b>	<b><u>% Fill</u></b>	<b><u>Short</u></b>
HEMTT Cargo	2136	1930	90	206
HEMTT Wrecker	1019	619	60	400
HEMTT Tanker	2109	1350	64	759



**Line Haul Tractor (M-915A3)**

- **M-915 10-Ton Tractors and M872 Trailers:** The M-915 tractor and the M-872 trailer in medium size truck companies are the primary units to fill the Army's long haul transportation requirements and state support missions. The ARNG currently has 70% of its M-915 tractor requirement on hand with a shortage of 240. In the M-915 fleet only 30 out of 1263 on hand are of the modern M-915A3 model. The Army's decision not to fund recapitalization for the M-915 basic truck fleet has generated a new requirement to procure replacement M-915A3 tractors to replace the ARNG fleet of M-915s that have reached their estimated service life. The ARNG is short 204 M-872 trailers.

- High Mobility Multi-Purpose Wheeled Vehicle (HMMWV): The

HMMWV remains the ARNG most significant shortage in the tactical wheeled fleet and one of the biggest EOH problems for mobilizing and deploying units. This Objective Force vehicle is critical to the ARNG and is projected to be more than 10,500 HMMWVs short after FY 2007. The majority of the shortages are in the basic M998 model, which the Army no longer procures. Army procurement is primarily for the M1097 shelter carrier and fielding to the ARNG is primarily in support of digitization systems to the



HMMWV

First Digitized Corps and newly activating units in ADRS. The requirement for the new M1114 Up-Armored HMMWV has caused a significant shortage problem as ARNG Military Police units have been activated for Homeland Defense and OCONUS operations prior to receiving the vehicle. The Up-Armored HMMWV will not complete fielding to the ARNG for several years and is counted on to replace early model HMMWVs and Commercial Utility Cargo Vehicles (CUCV). The ARNG fills shortages using the 1980 era CUCV series of vehicles, which was retired by the AC several years ago. The CUCV series is difficult to maintain because of the shortage of repair parts in the Army inventory and the age of the vehicles. The Army does permit the CUCV to be deployed for federal service, which creates significant cross leveling requirements to support the multiple deployment requirements the ARNG is currently undergoing. The ARNG is heavily dependent on Congressional adds, NGREA funding, and cascades to fill shortages. A possible alternative would be a new commercial replacement for the CUCV to fill Table of Distribution and Allowance (TDA) requirements that would cost half the price of a new HMMWV and would have easily accessible commercial repair parts and maintenance sources. Each year the requirement for HMMWVs grows at a faster rate than the ARNG can acquire them under the Army Transformation to a lighter force.

## 5. Communications-Electronics Equipment (C-E)

- Enhanced Position Location Radio System (EPLRS): Currently,



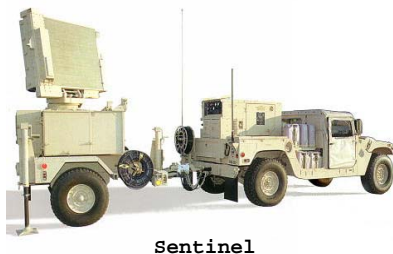
Enhanced Position Location Reporting System (EPLRS)

funding is programmed to provide all ARNG units in support of the First Digitized or Counter Attack Corps, however, EPLRS is not programmed for the rest of the ARNG. The quantity of EPLRS radios required to fill an eSB is approximately 387 and the divisions require 1640. The EPLRS is also critical for Echelons Above Division Air Defense Artillery Avenger units, particularly in the Counter Attack Corps. Currently, there are only two Air Defense Artillery Battalions in the ARNG who are scheduled to receive EPLRS in FY 2003. Without EPLRS, the Avenger

units will not be able to operate the Forward Area Air Defense, Command, Control and Intelligence system (FAADC2I) at full capability. FAADC2I procurement and fielding is on going for the ARNG, but the EPLRS systems are not programmed for procurement through FY 2007. Without EPLRS, these ARNG Avenger units, which are war traced to Combatant Commander contingencies, would not be able to operate at the same level as the AC units and would create a serious decrement in air defense capability for the supported units.

- Single Channel Ground Air Radio System (SINCGARS): Another of the ARNG's major shortages that impacts deployments, and one of its top equipping priorities, is the SINCGARS radio. The ARNG needs to retire the remaining obsolete VRC-12 series radios, which are 20-30 years old, unreliable, and do not have the frequency hopping capabilities of the SINCGARS. The SINCGARS shortages is also a significant problem for deploying units that can only be filled by cross leveling among other ARNG units at the detriment of training and readiness. SINCGARS procurement is another area that is dependent on Congressional adds and/or NGREA funds to fill shortfalls which have recently been used successfully to fund systems for units preparing for OCONUS contingency rotations. Army cascading of the initial model SINCGARS radios is used to fill shortages in divisional systems. However, they are not complete systems and the ARNG has been dependent on NGREA discretionary funding to acquire components necessary for complete total package fielding. As of FY 2003 the ARNG is still more than 20,000 systems short to retire the VCR-12 series radios.

- Night Vision Goggles (NVG): One of the more significant shortages that creates an equipping issue for deploying ARNG units is the PVS-7D NVG. The PVS-7D is especially in short supply with the divisional and other low priority units which are the units most often used to support SFOR/KFOR rotations and in support of Homeland Defense as commanders need to deploy with the same capability as the other units and with an advantage over threat forces. The ARNG is currently short at least 159,000 PVS-7D and the only programmed Army procurement is for the ARNG Stryker Brigade activation in the next eight years. This shortage adversely impacts a unit's ability to train for and conduct night operations. The older systems such as the PVS-5 NVGs are used as substitutes for the PVS-7B NVGs but are considered obsolete and inadequate. The ARNG continues to rely on Congressional adds in the form of NGREA funds to procure NVGs to fill shortages and modernize to meet deployment requirements.

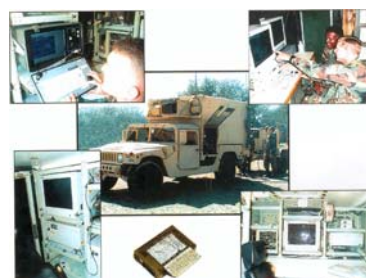


Sentinel

- Sentinel Radar: This new radar is currently being fielded to the ARNG Echelons above Division Avenger Air Defense Battalions. This radar provides an organic warning and alerting device against all airborne targets and is a critical component for digitized air defense battalions. Projected fielding shortages remain for the Armored Cavalry Regiment battery and divisional air defense battalions for a shortfall of 50 systems. This radar provides an organic warning and alerting device to the Short Range Air Defense units and is critical in automating the FAADC2I system. Projected shortages impact the capability of avenger units for Homeland Defense and OCONUS contingencies.

- Forward Area Air Defense Command Control and Intelligence System (FAADC2I): This critical command and control system for air defense provides critical digitization ability for battle management and command, control and communications for air defense battalions. All AC counterparts possess this capability and only the ARNG assigned to the Army's first digitized corps will be fielded the system. As a result of current Army funding

cuts, the ARNG has lost all funding for FY 2004-2009 in the remaining undigitized Avenger Air Defense Battalions. Once units without FAADC2I receive the Sentinel Radar system their efficiency/capability will only be 10% of units with FAADC2I. It is critical for the remaining Avenger Battalions to be fielded FAADC2I to remain relevant in the warfight and give them a comparable capability to the other Army Avenger Battalions. This is a critical shortfall for both the homeland defense mission as well OCONUS contingencies.



**Forward Area Air Defense Command & Control (FAADC2I)**



**Tactical Quiet Generator**

**6. Power Generation:** The generators on hand are currently older diesel versions. The majority of this shortfall lies in the smaller 3KW and 5KW model. Current fielding of 5-60KW generators are for Force Package 2 units. The Tactical Quiet Generator (TQG) fielding will have little impact on the majority of the ARNG forces, which fall into lower priority categories. The current fielding of 3KW TQG is only to high priority units. It is expected, if funding remains constant, the completion of the fielding will take eight to ten years. The Army's fielding to AC units has not resulted in a sufficient cascade of diesel generators to fill shortages and eliminate gasoline models from the ARNG

inventory. Until its power generation fleet is modernized and shortages filled, power generation capability in the ARNG will continue to be a readiness and capability concern.

(f) **Overall Equipment Readiness:** The ARNG utilizes a model which categorizes its forces into four groups called Managed Levels of Resource (MLR) (See table on the next page). This is necessary due to the inability of the Department of the Army to fund all its capabilities equally. The forces are assigned a level depending upon the immediacy of their current mission. MLR 1 forces are those that provide the National Command Authority with the ability to respond rapidly to crises with tailored forces capable of full spectrum operations. MLR 2 forces provide a rapid response capability to reinforce or augment the contingency response forces in a specific theater. MLR 3 forces can reinforce or augment a single Major Theater of War (MTW), or provide a portion of the primary force in the event of a second MTW. MLR 4 forces are required to train, equip, and sustain the current force, and provide follow-on forces in a protracted conflict.

### **Managed Levels of Resource**

<b>MLR</b>	<b>UNIT CATEGORY</b>
1	FSP-1
1	CPT/CS/CSS with latest arrival dates (LAD) less than 30 days: WMD-SCT; SF
2	FSP-2
2	CONUS Support Packages (CSP)
2	Special Forces Groups (SFG)
2	CBT/CS/CSS with LAD 31-75 days
3	FAD II and III units and Remaining FAD III
3	Units with LAD >76
3	Enhanced Separate Brigades
3	Scouts
4	Remaining FAD III (TRADOC)
4	Non FSP units
4	ARNG Divisions
4	FAD IV, and V (STARCS/TARCS)
4	Programmed Inactivation/ FAD V Planning Units

Shown below are the numbers of ARNG units currently reporting by MLR. Note: There are 37 fewer units reporting this year because they have been federalized, but the average number of units that now meet their goal has dropped from 87% to 71% due to the effects of equipment shortages and cross leveling to fill shortages in other units.

### **Number of Units Reporting Managed Levels of Resourcing**

<b>MLR</b>	<b>Number of Units</b>	<b>Number which met goal</b>	<b>Percent which met goal</b>
1	91	61	67%
2	462	346	75%
3	616	380	62%
4	321	270	71%
<b>TOTAL</b>	<b>1490</b>	<b>1057</b>	<b>AVG 71%</b>

Since September 2001, the ARNG has mobilized and deployed several units that are no longer reporting under the ARNG. Additionally those units that deployed were equipped to or above their MLR so the remaining units in some cases lost equipment to deploying units as states cross-leveled to fill shortages. In some cases MLR 1-3 units lost equipment to bring MLR 4 units that were redesignated to the MLR 1 for mobilization/deployment.



(g) Other Equipment Specific Issues: Because of Homeland Security requirements and deployments abroad, ARNG soldiers face greater challenges than ever. Training time and other resources such as ammunition, ranges, and qualified trainers are being used to support mobilizations and deployments. As a result, the availability of Training Aids, Devices, Simulators, and Simulations (TADSS) is at its most critical stage. TADSS devices such as Armor Full Crew Interactive Simulator, Bradley Fire Support Team, and Engagement Skills Trainer 2000 provide a training baseline for Inactive Duty Training at home station and do not require the resource-intensive activities of firing live rounds, traveling to and from training areas, and competing for ranges. Using these technologies, soldiers can conduct preliminary gunnery and maneuver training so they maximize live training events during Annual Training. Training of the ARNG is different from the AC due to geographic dispersion of units and significant time constraints of our soldiers. These differences necessitate unique TADSS solutions to meet the training requirements of the ARNG. Tab B identifies ARNG systems that enhance readiness.

b) Changes Since Last NGRER: Since the last NGRER the Army has reduced funding in several programs and cut several more and the Army's Recapitalization Program will provide little benefit to the ARNG through FY 2009. The ADRS program continues to remain funded and an ARNG brigade is now included in the Army plan as one of the six IBCTs/SBCTs. The Army's decision to cut programs impacts the ARNG by either not procuring equipment to modernize ARNG units to the same capability or limiting or eliminating the cascade of equipment to fill shortages or modernize units. The impact is that much of the equipment in the tactical vehicle fleet and the major ground combat systems is already beyond its expected service life and will have to continue to be used until replaced by new procurement or cascaded equipment beyond FY 2009. Consequently, there will continue to be competition for resources between correlating units in the effort to develop Objective Force units as opposed to the effort to modernize ARNG units.

c) Future Years Program (FY 2004-FY 2006): The FY 2002 Army Modernization Plan states the following with regard to the impact of Army Transformation on modernization and recapitalization of the RC: "Reserve Component forces will maintain capabilities compatible with the units that they support through the selective cascading of equipment from Active Component forces in the near-term and more extensive cascading of Legacy Force equipment in the mid to long term. The difficult decisions made to fully fund Objective and Interim Force programs, resulting in the reduction in the overall Legacy Force recapitalization and modernization effort, delay the modernization of the RC forces that rely on cascading. This delay is a necessary level of risk required to meet the Army's Vision of a future transformed force". This reflects the ARNG expectations for a future years program through FY 2009.

(1) FY 2006 Equipment Requirements: The Army's announcement of the termination of several programs will effect some of the anticipated fieldings in FY 2006. The ARNG was scheduled to field 15 Light Anti-Tank Companies equipped with the Improved Tube-Launched Optically-Tracked Wire-Guided Missile (TOW) Acquisition System (ITAS) through FY 2006. The decision to rescind funding for ITAS to the ARNG now presents the ARNG with a challenge to activate the units with existing TOW 2 systems, which are not in sufficient quantity to fill requirements.

(2) Anticipated New Equipment Procurements: The ARNG will begin to take its place as part of the counter attack corps with the fielding of digital enablers. The Army Modernization Schedule also shows the eSBs beginning digitization in FY 2004. Depending upon the Army Transformation schedule, the ARNG divisions may digitize after the eSBs and finish by approximately FY 2015. The level of digitization under the current plan would be at Battalion level command and control systems and above. Digitization of the maneuver systems would not occur until the unit transforms to the Objective Brigade Combat Team design.

(3) Anticipated Transfers from AC to the ARNG: The ARNG is relying upon the continued cascade of the M1A1, M1A2, and M2A2 models to replace the M113s and early model M1s. As available the Army will also continue to cascade SINCGARS radios, but there is an unfunded requirement to procure the other systems items to field complete systems. The Army will continue to field UH-60 aircraft to replace the UH-1 fleet retiring in FY 2004 and will cascade AH-64As as the AH-64D is fielded. The fielding of the AH-66 Comanche is also expected to create a cascade of OH-58D Kiowa Warriors for Aviation Scout units. There is no specific cascade plan and events such as AC mobilizations/deployments and extended tours can effect the timetable. The Army has also experienced funding problems in Second Destination Transportation and in bringing the equipment to the 10/20 transfer standard.

(4) Anticipated Withdrawals from the ARNG Inventory: The Army is progressing to its goals of retiring all UH-1 Huey helicopters and replacing them with UH-60A BlackHawk helicopters by the end of FY 2004. The ARNG also anticipates that it will replace all M1 and M1IP Main Battle Tanks and some of the M2s and M113s with cascaded M1A1, M1A2, and M2A2 Main Battle Tanks.

(5) Equipment Shortages and Modernization Shortfalls at the end of FY 2006, and the effects of these shortages on overall equipment readiness: At the end of FY 2004, the ARNG will continue to have considerable CS equipment shortages and modernization shortfalls. The Construction Equipment (CE) and Materiel Handling Equipment (MHE) systems are terribly under-funded and will not experience significant modernization. CE shortfalls include Engineer Mission Modules, 5-ton dump trucks, and bulldozers. MHE shortfalls include forklifts and cranes. Other significant CS shortfalls include the Armored Vehicle Launched Bridges, M9 Armored Combat Earthmovers, and bridging assets. As a result of the modernization shortfall, the Combatant Commander loses capability to support the battle.

The Hercules (M88A2) fielding plan currently excludes ARNG Divisions and EAD units, as it fields primarily to AC III Corps units and TRADOC. This leaves the ARNG with equipment (M88A1) procured in the late 1970s that will be used until almost 2030. The M88A1 recovery vehicle cannot recover the M1 series tank. This multiplies the effects of the shortages for ARNG units and strains the system.

The Army provides training to units receiving new equipment that is either new procurement equipment or displaced equipment. This training is instrumental in a unit's ability to properly and safely operate the equipment. Because of the limited training days available to ARNG individuals in an annual training year, units in some cases will have to fund additional mandays of training time in order for personnel to receive the training. While the Army funds

the instructors, the cost to ARNG units to receive the training has been underfunded by 50% over the last two years. Units in most cases absorb this cost from their OPTEMPO funding, creating other readiness problems.

d) Summary and Conclusions: Over the last year the ARNG has undergone its largest mobilization and deployment in support of Homeland Defense and OCONUS operations, since Operation DESERT SHIELD/STORM. The ARNG has successfully met each mobilization requirement and is at the fore front of Homeland Defense throughout the United States. The challenges of filling the equipment shortages for the mobilized units have impacted the EOH and readiness of other units as states cross-leveled equipment to fill shortages. The systems that continue to cause the most turbulence are HMMVSS, PVS-7Ds and SINCGARS radio systems.

The Army has also announced the intent to terminate and/or delay funding for several equipment modernization programs that will impact modernizing the ARNG and eliminating obsolete systems. The expected cascade of equipment to fill shortages in the ARNG has not materialized to the full extent anticipated as the Army has elected to recapitalize existing equipment for its legacy force rather than procure new systems. The Army's recapitalization and modernization of its legacy combat force is not adequately funded to include the ARNG beyond the Counter Attack Corps. The higher OPTEMPO of the last year, combined with the age of its major combat systems, has challenged the ARNG support infrastructure to maintain readiness rates.

The ARNG continues to rely upon Congressional additions to the annual budget to fill critical shortages and/or modernize units not undergoing ADRS or transformation. Especially critical is NGREA miscellaneous funding which gives the ARNG Director the needed flexibility to fill critical readiness shortages that would otherwise remain unfilled.



**TAB A**  
**ARNG NGREA Procurement Summary (\$M)**

<b>SYSTEM</b>	<b>FY 99 SUM</b>	<b>FY 00 SUM</b>	<b>FY 01 SUM</b>	<b>FY 02 SUM</b>	<b>FY 03 SUM</b>
HMMWV CONTACT MAINTENANCE TRUCK		7.4	10.46		
HMMWV EOD CONTACT MAINTENANCE TRUCK		1.1			
METEOROLOGICAL MEASURING SYSTEM (MMS)		2.86			1.46
SINGLE CHANNEL GROUND AIR RADIO SYSTEM	1.2	4.85	1.28		3.3
UH-60 MAINTENANCE TRAINER		3.4			
HEMMT TANKER	5.6	3.75	6.14		2.9
HEMTT WRECKERS			6.1		3.2
CRASHWORTHY FUEL CELLS (CH-47D)		1			
ROLLER VIBRATORY		0.45			
JANUS BATTLE STAFF (16WS) UPGRADES		0.72			
JANUS BATTLE STAFF (16WS) NEW		0.96			
AN/PVS-7D, NIGHT VISION GOGGLES			1.66	6.11	3.9
ABRAMS FULL-CREW INTERACTIVE SKILLS TRAINER	1.8	3.36	8.42		
M871A3 SEMI-TRAILER	6.9		7.2		
M1088A1 5 TON TRACTOR (FMTV)			2.95		
M1083 FMTV 5 TON CARGO VEHICLE					4.9
D7 DOZER MODIFICATION			1.6		
RADIO SET CONTROLS			0.45		
CH-47D CRASHWORTHY FUEL CELLS	2		1.75		
HYDRAULIC EXCAVATOR (HYEX)			1.52		
SINGGARS CASCADE				17.89	7.3
BRADLEY ODS				50.85	
RESERVE AUTOMATION SYSTEM				15.35	
HMMWV				17.35	2.87
UH-60 BLACKHAWKS				49.85	
ENGAGEMENT SKILLS TRAINER				4	
HETS				2.34	
LASER MARKSMANSHIP TRAINING SYSTEM				8.35	
MULTI-ROLE BRIDGING COMPANIES				15.35	
FAMILY OF HEAVY TACTICAL VEHICLES				17.55	
DISTANCE LEARNING				5.85	
AERO MED HOISTS	2.1				
AVIATION SUPPORT SETS				8	
<b>TOTALS</b>	<b>19.6</b>	<b>29.85</b>	<b>49.53</b>	<b>218.84</b>	<b>29.83</b>

## ARNG TAB B

### Training Aids, Devices, Simulators, and Simulations

SYSTEM	DESCRIPTION	REQUIRED	QUANTITY SHORT
Abrams Full Crew Interactive Skills Trainer Upgrade (AFIST)	Upgrades AFIST to AFIST XXI for unit precision gunnery requirements. AFIST is a PC based deployable system that trains M1A1 crews in gunnery.	163	41
Deployable Force on Force Instrumented Range System (DFIRST)	The Instrumented Range provides the ARNG a live, virtual, and constructive training experience. The initial phase is to digitize the live training area using Global Positioning System target pairing.	7	4
SIMNET Rehost (Platoon Sets)	SIMNET ReHost is an initiative that leverages the historical advantages of virtual mounted maneuver and gunnery with current technology to produce an interim solution for ARNG units until the Close Combat Tactical Trainer (CCTT) fielding is completed to the ARNG. Like CCTT, Rehosted SIMNET simulates M1 Abrams tank and the M2/M3 Bradley vehicles with space for all crew positions. The ARNG has tested this low cost, PC based, Re-UP SIMNET and found that it provided an adequate, high fidelity, affordable, and available training for ARNG units that do not have access to CCTT.	56	6
Fire Support Combined Arms Tactical Trainer - Towed	The FSCATT program is comprised of three components which produce collective training for Field Artillery units. These three components include either the Howitzer Crew Trainer (HCT) or the Howitzer Strap On Trainer (HSOT), Guardfist II, & the Collective. The FSCATT-T device as an equivalent substitute for the Howitzer Strap On Trainer for the towed artillery units. The HCT is a full sized simulation trainer that uses actual M109A5 Howitzer components to simulate individual and crew duties. The simulated turret provides realistic crew duties, to include loading, firing.	116	116
Digital Systems Test & Training Simulator Programmable Communications Controller (PCC) Upgrade	The PCC is a software and hardware package that will significantly enhance the communications capabilities of the 271 DSTATS devices currently fielded. The PCC is a peripheral device connected via parallel cables to the DSTATS. The PCC will immediately provide 2-channel communications and has the capability to provide 4-channel communications with the additions of PCC modem cards.	271	271
Bradley Full-Crew Interactive Skills Trainer	Supports Bradley Fighting Vehicle Precision Gunnery Requirements, as required by current Army Gunnery Standards. The increased use of simulators in training gunnery is specified in the National Guard Combat Reform Act, Section 1119, Title IX USC.	135	119
Armor Table Top Crew Trainers	Table Top Crew Trainers are a virtual environment trainer to assist crews with an armory based training solution. Table Top Trainers can perform virtual maneuver and gunnery at the individual, crew, and small unit level. The trainer is PC based with mounts for the Commander & Gunner control handles, and an audio system. The trainer also has realistic Commander & Gunner sights and individual training & gunnery exercises embedded which allow the soldier several training choices to maintain proficiency. Exercise results can be printed for review purposes.	684	678

## ARNG TAB B

### Training Aids, Devices, Simulators, and Simulations

Mechanized Infantry Table Top Trainers	Table Top Crew Trainers are a virtual environment trainer to assist crews with an armory based training solution. Table Top Trainers can perform virtual maneuver and gunnery at the individual, crew, and small unit level. The trainer is PC based with mounts for the Commander & Gunner control handles, and an audio system. The trainer also has realistic Commander & Gunner sights and individual training & gunnery exercises embedded which allow the soldier several training choices to maintain proficiency. Exercise results can be printed for AAR purposes.	644	642
Fire Support Combined Arms Tactical Trainer (FSCATT) M109A5 to M109A6 Conversation	The FSCATT program is comprised of three components which produce collective training for Field Artillery units. These three components include either the Howitzer Crew Trainer (HCT) or the Howitzer Strap On Trainer (HSOT), Guardfist II, & the Collective. The HCT is a full sized simulation trainer that uses actual M109A6 Paladin Howitzer components to simulate individual and crew duties. The simulated turret provides realistic crew duties, to include loading, firing, and complete review capabilities.	6	6
Engagement Skills Trainer (EST) 2000	EST 2000 is a low-cost, easily maintained, PC based training device used to develop and sustain required marksmanship training skills, execute collective unit training engagements and practice shoot-don't-shoot scenarios. A training strategy that combines ammunition, Training Aids, Devices, Simulations and Simulators (TADSS) saves approximately \$60.2M annually over an ammunition-only training strategy. The EST 2000 can pay for itself in just one year in ammunition savings alone.	510 Five Lane Systems	430
JANUS	JANUS is a brigade through platoon level constructive device that provides realistic training to staffs at remote sites. The system has the capability to train on various scenarios and staff organizations. JANUS is designed to train the synchronization of the maneuver, fire support, mobility/countermobility/survivability and air defense Battlefiled Operating Systems (BOS). Courses of action can be analyzed and changed, significantly increasing the ability of the commanders and staff officers to understand the synchronizornization of all the BOS'.	85	21

## Consolidated Major Item Inventory and Requirements

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>FY 2004 UNIT COST</b>	<b>Beginning FY 2004 QTY O/H</b>	<b>Beginning FY 2005 QTY O/H</b>	<b>Beginning FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY REQ</b>
<b>AIRCRAFT</b>							
HELICOPTER,OBSERVATION,OH-58D (KIOWA)	A21633	4,075,800	18	18	18	18	18
AIRPLANE, CARGO, TRANSPORT, C-12E	A29812	1,967,301	7	7	7	7	2
AIRPLANE, CARGO, C-23	A29880	7,424,158	44	44	44	44	44
AIRPLANE, CARGO, C-12	A30062	3,068,422	37	37	37	37	37
AIRPLANE CARGO, TRANSPORT, C-26	A46758	800,000	11	11	11	11	11
HELICOPTER,ATTACK AH-64 (APACHE)	H28647	10,680,000	155	155	156	156	185
HELICOPTER,CARGO CH-47D (CHINOOK)	H30517	1,820,458	140	140	140	140	151
HELICOPTER,OBSERVATION OH-58C (KIOWA)	H31110	190,817	84	84	0	0	0
HELICOPTER,MEDICAL UH-1V (IROQUOIS)	H31872	948,158	170	170	0	0	0
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361	4,855,000	123	123	123	123	123
HELICOPTER,OBSERVATION OH-58A (KIOWA)	K31042	92,290	210	125	125	125	125
HELICOPTER,UTILITY UH-1H (IROQUOIS)	K31795	922,704	98	0	0	0	0
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	4,635,000	440	440	440	440	494
<b>MISSILES</b>							
FIRE UNIT VEHICLE MOUNTED,AVENGER	F57713	1,059,018	259	259	259	259	326
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	1,973,897	290	290	290	290	400
<b>COMMUNICATIONS EQUIPMENT</b>							
RADIO SET AN/ARC-102	Q25978	16,932	13	13	13	13	7
RADIO SET AN/ARC-114	Q25990	20,857	609	609	609	609	433
RADIO SET AN/VRC-92A (SINGARS)	R45407	21,238	4,466	4,466	4,466	4,466	5,954
RADIO SET AN/PRC-119 (SINGARS)	R55268	6,418	82	82	82	82	180
RADIO SET AN/VRC-87A (SINGARS)	R67160	12,109	2,688	2,688	2,688	2,688	4,041
RADIO SET AN/VRC-88A (SINGARS)	R67194	12,519	3,831	3,831	3,831	3,831	6,234
RADIO SET AN/VRC-90A (SINGARS)	R67908	13,178	9,503	9,503	9,503	9,503	19,416
RADIO SET AN/VRC-91A (SINGARS)	R68010	23,249	5,317	5,317	5,317	5,317	7,315
RADIO SET AN/PRC-112	R82903	5,020	770	972	1,003	1,003	5,139
RADIO SET AN/VRC-119A (SINGARS)	R83005	10,117	4,561	4,561	4,630	4,630	5,770
GUN LAYING POSITIONING SYSTEM	G97730	96,400	172	172	172	172	172
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>							
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	8,432	12,935	12,935	12,935	12,935	18,106
MASK,CHEMICAL BIOLOGICAL M4C	M12418	144	273,427	273,427	273,427	273,427	279,160
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	202	60,045	60,045	60,045	60,045	49,951
ALARM CHEM DET M22	A33020	10,000	257	257	257	257	15,270
<b>CONSTRUCTION EQUIPMENT</b>							
BRIDGE ARMORED VEHICLE,SCISSOR TYPE	C20414	87,742	354	354	354	354	340
REINFORCEMENT SET,MEDIUM GIRDER BRIDGE	C27309	498,940	7	8	8	8	10
COMPACTOR,HIGH SPEED	E61618	135,186	114	114	114	114	104
CRANE,WHEEL MOUNTED,20T	F39378	236,460	3	3	3	3	108
CRANE-SHOVEL,CRAWLER MOUNTED	F40474	509,140	4	7	7	7	14
ATEC CRANE	F43429	236,460	114	114	114	114	136
CRUSH & SCREEN PLANT,75TPH	F49399	131,168	6	6	6	6	10
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852	129,684	1	1	1	1	27
GRADER,ROAD,MOTORIZED,SECTIONALIZED	J74886	298,120	1	10	10	10	14
GRADER,ROAD,MOTORIZED,10FT BLADE	J74910	150,000	18	18	18	18	18
INTERIOR BAY BRIDGE,FLOATING	K97376	41,940	224	224	224	224	182
ASPHALT PLANT	M57048	1,254,600	2	2	2	2	4
VIBRATOR ROLLER	S12916	61,408	111	111	111	111	258
TRACTOR,FULL TRACKED,LOW SPEED	W76816	205,000	632	632	632	632	414
TRACTOR,FT,LS,DED,MED	W83529	245,275	330	330	330	330	724
HYDRAULIC EXCAVATOR	VARIOU	303,800	23	23	23	23	23

**ARNG**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>FY 2004 UNIT COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
<b>ELECTRICAL GENERATION</b>							
GENERATOR SET,DSL ENG,TM,10KW,60HZ,MTD ON M116	G40744	12,102	901	901	911	911	819
GENERATOR SET,DSL ENG,SKID	G54041	6,459	1,449	1,449	1,449	1,449	6,216
GENERATOR SET,DIESEL ENGINE,30KW	J36383	20,810	576	576	576	576	508
<b>OTHER PROCUREMENT</b>							
EPLRS (ENHANCED POSITION LOCATION RADIO SYS)	P49587	46,661	456	456	456	456	456
MELIOS PVS-6 EYE SAFE LASER OBSERVATION	M74849	8,549	1,199	1,248	1,344	1,344	3,226
NIGHT VISION GOGGLES AN/PVS-5	N04456	4,300	25,955	25,955	25,955	25,955	21,133
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	3,433	4,095	4,173	4,281	4,281	16,677
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	69,641	6	6	6	6	212
NIGHT VISION GOGGLES AN/PVS-7E	N05482	3,578	55,984	59,267	60,878	60,878	157,817
RADAR SET AN/TPQ-36(V)	R14148	3,760,576	35	35	35	35	31
METEOROLOGICAL MEASURING SET/TMQ-41	M35941	500,000	22	22	22	22	49
<b>TACTICAL VEHICLES</b>							
TACTICAL FIRE TRUCK	H56391	151,000	72	72	72	72	70
SEMITRAILER,22-1/2 TON M871	S70027	24,483	2,859	2,936	2,936	2,936	5,459
SEMITRAILER,FB,TRANSPORTR,34T	S70159	20,004	2,837	2,837	2,837	2,837	2,527
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594	22,947	983	983	983	983	979
SEMITRAILER,HVY EQUIP TRANSPORTER,60T (HET)	S70661	70,564	270	270	270	270	190
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859	198,789	417	547	547	547	918
SEMITRAILER 7500 GAL POL	S73119	30,165	375	375	375	375	1,380
SEMITRAILER 5000 GAL POL	S73372	97,413	530	569	571	571	712
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	58,374	700	700	700	700	2,752
TRUCK,CARGO,TACTICAL,W/W-LT CR (HEMTT)	T39518	193,789	264	264	264	264	324
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	194,853	787	793	799	799	968
TRUCK,CARGO,TACTICAL,W/W&Wo/W M985 (HEMTT)	T39654	202,560	178	181	181	181	140
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	243,746	465	465	611	611	557
TRANSPORTER,PALLETIZED LOAD SYS W/MHE (PLS)	T41067	288,015	740	740	740	740	655
TRUCK, CARGO, MTV W/W M1083	T41135	134,047	144	144	144	144	41
TRUCK CARGO MTV M1084 W/MHE	T41203	180,357	48	48	48	48	36
TRAILER HEMAT M989A1 (MLRS)	T45465	34,714	527	527	527	527	1,302
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	270,993	637	651	651	651	512
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	256,704	415	545	545	545	918
TRUCK,CARGO,10TON,W/LT CRANE (HEMTT)	T59278	185,820	818	818	818	818	694
TRUCK,CARGO,4X4,LMTV M1078	T60081	104,626	513	633	633	633	1,830
TRK 5 TON TRACTOR, FMTV M1088	T61239	142,132	489	489	728	728	1,281
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	36,076	17,513	17,620	17,717	17,717	26,878
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	36,672	1,480	1,496	1,496	1,496	2,278
TRUCK CARGO MTV LWB M1085	T61704	118,791	3	3	3	3	43
TRUCK CARGO MTV LWB M1085 W/W	T61772	110,992	0	0	0	0	10
TRUCK,CARGO,MTV W/E M1083	T61908	128,076	525	525	525	525	527
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	276,866	661	661	677	677	1,053
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	100,199	49	49	49	49	27
TRUCK,TANKER,FUEL,2500G (HEMTT)	T87243	260,043	915	915	915	915	1,640
TRUCK,TRACTOR,LET M916	T91656	164,760	840	842	855	855	388
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	64,281	3,314	3,314	3,314	3,314	2,441
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	39,518	975	975	975	975	1,427
TRUCK CARGO LMTV M1079 W/E	T93484	162,060	82	82	82	82	79
TRAILER,PALLETIZED LOAD SYSTEM (PLS)	T93761	46,731	522	522	522	522	556
TRUCK 5 TON WRECKER FMTV M1089	T94709	331,680	67	67	67	67	93
TRUCK,CARGO,5T,DROP SIDE WW	X40931	85,946	1,547	1,547	1,547	1,547	1,255
TRUCK,DUMP,5T,6X6,W/E M929	X43708	89,115	1,807	1,807	1,807	1,807	476
TRUCK,DUMP,5T 6X6 WW WE	X43845	93,130	717	717	717	717	84
TRUCK,DUMP,20T,12 CY M917	X44403	191,616	591	600	612	612	561
<b>TRACKED &amp; WHEELED COMBAT SYSTEMS</b>							
CARRIER,AMMO,TRACKED M992A2	C10908	630,000	325	325	325	325	327
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	627,881	496	496	496	496	500
ARMORED PERSONNEL M1059A2	C12815	298,778	105	105	105	105	98
ARMORED PERSONNEL CARRIER M113A3	C18234	405,815	1,599	1,599	1,599	1,599	2,435
CAVALRY FIGHTING VEHICLE,M3A0 (BRADLEY)	C76335	1,056,845	154	154	154	154	97

## Consolidated Major Item Inventory and Requirements

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>FY 2004 UNIT COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
CARRIER,CARGO,FT,6 TON M548	D11049	323,416	965	965	965	965	540
CARRIER,COMMAND POST M577A1	D11538	345,787	2,069	2,069	2,069	2,069	1,854
ARMORED PERSONNEL CARRIER M113A1/2	D12087	244,844	3,664	3,664	3,664	3,664	1,111
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	1,349,348	555	555	555	555	522
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	1,144,000	237	237	237	237	264
HOWITZER,LIGHT,TOWED,105MM M119	H57505	619,933	56	56	56	56	68
HOWITZER,MEDIUM,SP,155MM M109A6 (PALADIN)	H57642	1,435,000	267	267	267	267	325
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	1,061,457	1,016	1,016	1,016	1,016	627
HOWITZER,M102,105MM,LT,TWD	K57392	126,016	317	317	317	317	249
HOWITZER,MEDIUM,SP,155MM M109A5	K57667	758,038	1,009	1,009	1,009	1,009	415
LAUNCH,M60 TANK CHASSIS	L43664	527,126	299	299	299	299	437
RECOVERY VEHICLE,FT,MDM M88A1	R50681	1,210,755	983	983	983	983	1,031
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	2,393,439	1,390	1,390	1,390	1,390	1,513
TANK,COMBAT,105MM M1 (ABRAMS)	T13374	1,645,697	1,450	1,450	1,450	1,450	953
TRACTOR,FULL TRACKED,ARMORED M9 (ACE)	W76473	887,050	79	93	95	95	191
<b>WEAPONS</b>							
MACHINE GUN,7.62MM 240B	M92841	6,000	130	130	130	130	46
RIFLE,5.56 MM M16A2	R95035	449	213,508	213,508	213,508	213,508	273,477

**ARNG**  
**Average Age of Equipment**

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for fiscal year (FY) 2004.*

<b>NOMENCLATURE</b>	<b>EQUIP NO.</b>	<b>AVERAGE AGE</b>	<b>REMARKS</b>
<b>AIRCRAFT</b>			
HELICOPTER, ATTACK AH-64A (APACHE)	H28647	14	
HELICOPTER, CARGO CH-47D (CHINOOK)	H30517	13	
HELICOPTER, OBSERVATION, OH-58D (KIOWA)	A21633	13	
HELICOPTER, UTILITY UH-60A (BLACKHAWK)	K32293	20	
HELICOPTER, UTILITY UH-60L (BLACKHAWK)	H32361	7	
<b>MISSILES</b>			
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	15	
FIRE UNIT VEHICLE MOUNTED, AVENGER	F57713	10	
<b>COMMUNICATION EQUIPMENT</b>			
DATA PROCESS SYSTEM AN/MYQ-4	D78075	20	
DATA PROCESS SYSTEM AN/MYQ-4A	D78325	20	
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>			
DECONTAMINATION APPARATUS, SKID MOUNTED	F81880	29	
<b>CONSTRUCTION EQUIPMENT</b>			
BRIDGE ARMORED VEHICLE, SCISSOR TYPE	C20414	32	
CRANE, WHEEL MOUNTED, 20T	F39378	32	
CRANE-SHOVEL, CRAWLER MOUNTED	F40474	12	
GRADER, ROAD, MTR, FRONT WHEEL STEER	J74852	26	
SMALL EMPLACEMENT EXCAVATOR W/FRONT LOADER	T34437	14	
TRUCK, DUMP, 20T, 12 CY M917	X44403	25	
TRUCK, DUMP, 5T 6X6 WW WE	X43845	34	
ROLLER PNEUMATIC, VARIABLE PRESSURE	S11793	25	
TRACTOR, FULLTRACKED, ARMORED M9 (ACE)	W76473	9	
TRACTOR, FULLTRACKED, LOW SPEED	W76816	31	
TRACTOR, FULLTRACKED, LOW SPEED, DED, MED	W83529	23	
<b>ELECTRICAL GENERATION</b>			
ELECTRONIC SHOP AN/ASM-190LP	H01857	14	
GENERATOR SET, DIESEL ENGINE, 30KW	J36383	19	
GENERATOR SET, DSL ENG, TM, 10KW, 60HZ, MTD ON M116 PU	G40744	13	
GENERATOR, PU-405	J35492	19	
<b>OTHER PROCUREMENT</b>			
KITCHEN, FIELD, TRAILER MOUNTED, M103A3 TR	L28351	17	
SHELTER SYSTEM, COLLECTIVE, 10 MAN	T00474	21	
SHOP EQUIPMENT, CONTACT	T10138	26	
SHOP SET, CONTACT MAINTENANCE	S30914	18	
SHOP SET, CONTACT MAINTENANCE	S30982	17	

**ARNG**  
**Average Age of Equipment**

Table 2

<i>NOMENCLATURE</i>	<i>EQUIP NO.</i>	<i>AVERAGE AGE</i>	<i>REMARKS</i>
<b>TACTICAL VEHICLES</b>			
ROUGH TERRAIN CARGO HANDLER, 50K LB (RTCH)	T48941	19	
TRACTOR, WHEELED, WAREHOUSE, 4K LB	W89557	23	
TRANSPORTER, PALLETIZED LOAD SYSTEM (PLS)	T40999	7	
TRUCK, CARGO, 10 TON, W/LT CRANE (HEMTT)	T59278	19	
TRUCK, CARGO, 5T, DROP SIDE WW	X40931	19	
TRUCK, CARGO, TACTICAL, W/W-LT CR (HEMTT)	T39518	15	
TRUCK, FORK LIFT, 6K LB, RT, VARIABLE REACH	T48944	10	
TRUCK, FORK LIFT, DD, 4K LB, RT	T49255	20	
TRUCK, M985, CARGO, W/MED CR (HEMTT)	T39586	12	
TRUCK, TANKER, FUEL, 2500G (HEMMT)	T87243	13	
TRUCK, TANKER, FUEL, 2500G WW (HEMTT)	T58161	13	
TRUCK, TRACTOR, HEAVY EQUIP TRANS SYS (HET)	T59048	9	
TRUCK, TRACTOR, LET M916	T91656	19	
TRUCK, TRACTOR, TACTICAL, 8X8, HVY EXPANDED	T88677	17	
TRUCK, UTILITY, 1-1/4 TON, M1036, TOW (HMMWV)	T92310	13	
TRUCK, UTILITY, 1-1/4 TON, M998, WE (HMMWV)	T61494	12	
TRUCK, WRECKER, M948E1, 8X8 (HEMMT)	T63093	12	
TRK UTILITY: HEAVY VARIANT HMMWV 4X4 10000	T07679	9	
SEMITRAILER TANK, PETROLEUM, 7500 GAL, BULK HAUL	S73119	11	
SEMITRAILER, 221/2 TON M871	S70027	19	
SEMITRAILER, FB, TRANSPORTER, 34T	S70159	19	
SEMITRAILER, HVY EQUIP TRANSPORTER, 60T (HET)	S70661	27	
SEMITRAILER, LOW BED, 40 TON, 6-WHEEL	S70594	24	
SEMITRAILER, VAN, SUP M129A2C	S75175	34	
<b>TRACKED &amp; WHEELED COMBAT SYSTEMS</b>			
ARMORED PERSONNEL CARRIER M113A3	C18234	14	
ARMORED PERSONNEL CARRIER, FISTV	C12155	35	
ARMORED PERSONNEL CARRIER, FM113A1/2	D12087	31	
CARRIER CARGO, FT, 6 TON M548	D11049	34	
CARRIER, AMMO, TRACKED M992A2	C10908	16	
CARRIER, COMMAND POST M577A1	D11538	15	
CARRIER, M106A1, 107MM MORT, 4.2IN	D10741	36	
CARRIER, SMOKE GENERATOR, FT, ARMD	C12815	30	
CAVALRY FIGHTING VEHICLE M3A0(BRADLEY)	C76335	18	
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	14	
HOWITZER, M102, 105MM, LT, TWD	K57392	44	
HOWITZER, MEDIUM, SP, 155MM M109A5	K57667	31	
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	18	
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	11	
LAUNCH, M60 TANK CHASSIS	L43664	26	
RECOVERY VEHICLE, FT, MDM M88A1	R50681	27	
TANK, COMBAT, 105 MM M1 (ABRAMS)	T13374	18	
TANK, COMBAT, 120MM M1A1 (ABRAMS)	T13168	15	



**ARNG**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>MODIFICATION OF AIRCRAFT</b>				
CH-47 CARGO HELICOPTER MODS	6,000,000	85,000,000	54,400,000	
UTILITY/CARGO AIRPLANE MODS	10,448,000	10,380,000	13,870,000	
OH-58 MODS	477,000	0	0	
AIRCRAFT LONG RANGE MODS	762,000	756,000	779,000	
AIRBORNE AVIONICS	3,148,000	0	9,953,000	
GATM ROLLUP	29,980,000	3,950,000	6,699,000	
AIRBORNE DIGITIZATION	0	1,668,000	2,578,000	
<b>SPARES AND REPAIR PARTS</b>				
SPARE PARTS (AIR)	0	0	4,196,000	
<b>OTHER SUPPORT</b>				
AIR TRAFFIC CONTROL	6,000,000	15,000,000	14,000,000	
AIRBORNE COMMUNICATIONS	15,600,000	0	0	
<b>ANTI-TANK/ASSAULT MISSILE SYSTEM</b>				
MLRS LAUNCHER SYSTEMS	0	26,749,000	0	
HIMARS LAUNCHER	0	32,827,000	206,572,000	
<b>MODIFICATIONS</b>				
MLRS MODS	4,494,000	4,822,000	3,655,000	
HIMARS MODIFICATIONS	0	0	1,444,000	
<b>SPARES AND REPAIR PARTS</b>				
SPARES AND REPAIR PARTS	4,590,000	1,305,000	4,361,000	
<b>TRACKED COMBAT VEHICLES</b>				
STRYKER	0	0	614,255,000	
<b>WEAPONS AND OTHER COMBAT VEHICLES</b>				
XM107, CAL. 50, SNIPER RIFLE	1,786,000	2,988,000	3,338,000	
5.56 CARBINE M4	8,030,000	6,031,000	0	
HOWITZER LT WT 155MM (T)	0	0	30,000,000	
<b>TACTICAL VEHICLES</b>				
SEMITRAILERS, FLATBED:	22,220,000	5,902,000	1,809,000	
SEMITRAILERS, TANKERS	1,472,000	5,028,000	0	
HI MOB MULTI-PURP WHLD VEH (HMMWV)	64,050,000	108,941,000	144,588,000	
FAMILY OF MEDIUM TACTICAL VEH (FMTV)	94,361,000	110,315,000	202,614,000	
FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIPMENT	1,197,000	6,987,000	9,222,000	
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)	21,667,000	49,946,000	58,416,000	
<b>COMM - SATELLITE COMMUNICATIONS</b>				
SHF TERM	16,000,000	16,000,000	0	
SAT TERM, EMUT (SPACE)	0	700,000	200,000	
SMART-T (SPACE)	5,163,000	0	810,000	
<b>COMM - COMBAT COMMUNICATIONS</b>				
ARMY DATA DISTRIBUTION SYSTEM (DATA RADIO)	52,384,000	0	0	
SINGARS FAMILY	0	0	3,300,000	
ACUS MOD PROGRAM	6,638,000	6,038,000	4,731,000	
COMMS-ELEC EQUIP FIELDING	700,000	720,000	750,000	
MEDICAL COMM FOR CBT CASUALTY CARE (MC4)	0	0	2,737,000	
TSEC - ARMY KEY MGT SYS (AKMS)	96,000	135,000	157,000	
<b>ELECT EQUIP - TACT INT REL ACT (TIARA)</b>				
TUAV	0	15,000,000	0	
MOD OF IN-SVC EQUIP (INTEL SPT) (TIARA)	0	0	0	
CI HUMINT INFO MANAGEMENT SYSTEM (CHIMS) (TIARA)	730,000	0	0	
ITEMS LESS THAN \$5.0M (TIARA)	1,379,000	3,324,000	0	
<b>ELECT EQUIP - TACTICAL SURV. (TAC SURV)</b>				
PROFILER	0	0	1,154,000	
ELECT EQUIP - TACTICAL C2 SYSTEMS				

**ARNG**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.*  
*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
TACTICAL OPERATIONS CENTERS	2,790,000	7,700,000	1,262,000	
<b>ELECT EQUIP - TACTICAL C2 SYSTEMS</b>				
ADV FA TAC DATA SYS / EFF CTRL SYS (AFATDS/ECS)	0	0	910,000	
FAAD C2	5,726,000	5,787,000	3,356,000	
KNIGHT FAMILY	1,885,000	1,383,000	0	
ISYSCON EQUIPMENT	7,916,000	12,083,000	503,000	
JOINT NETWORK MANAGEMENT SYSTEM (JNMS)	1,544,000	1,092,000	455,000	
MANEUVER CONTROL SYSTEM (MCS)	0	0	600,000	
STANDARD INTEGRATED CMD POST SYSTEM	361,000	0	0	
<b>ELECT EQUIP - AUTOMATION</b>				
<b>BRIDGING EQUIPMENT</b>				
TACTICAL BRIDGING	9,629,000	9,877,000	22,931,000	
TACTICAL BRIDGE, FLOAT-RIBBON	35,967,000	63,432,000	8,321,000	
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>				
HEATERS AND ECU'S	35,000	0	0	
LIGHTWEIGHT MAINTENANCE ENCLOSURE (LME)	184,000	1,851,000	3,477,000	
LAND WARRIOR	0	0	56,750,000	
AUTHORIZED STOCKAGE LIST MOBILITY SYSTEM (ASLMS)	0	1,520,000	0	
FIELD FEEDING EQUIPMENT	2,341,000	5,265,000	1,242,000	
<b>PETROLEUM EQUIPMENT</b>				
DISTRIBUTION SYSTEMS, PETROLEUM & WATER	7,913,000	2,083,000	31,335,000	
<b>WATER EQUIPMENT</b>				
WATER PURIFICATION SYSTEMS	3,120,000	4,300,000	5,673,000	
<b>MEDICAL EQUIPMENT</b>				
COMBAT SUPPORT MEDICAL	945,000	0	3,686,000	
<b>MAINTENANCE EQUIPMENT</b>				
SHOP EQ CONTACT MAINTENANCE TRK MTD (MYP)	1,241,000	4,818,000	4,782,000	
WELDING SHOP, TRAILER MTD	1,655,000	2,154,000	1,947,000	
<b>CONSTRUCTION EQUIPMENT</b>				
MISSION MODULES - ENGINEERING	6,676,000	0	1,430,000	
CRUSHING/SCREENING PLANT, 150 TPH	1,781,000	2,717,000	0	
<b>GENERATORS</b>				
GENERATORS AND ASSOCIATED EQUIP	14,760,000	16,214,000	22,648,000	
<b>MATERIAL HANDLING EQUIPMENT</b>				
ROUGH TERRAIN CONTAINER HANDLER (RTCH)	8,467,000	0	17,583,000	
ALL TERRAIN LIFTING ARMY SYSTEM	6,890,000	3,510,000	13,918,000	
<b>TEST MEASURE AND DIG EQUIPMENT (TMD)</b>				
INTEGRATED FAMILY OF TEST EQUIPMENT (IFTE)	0	0	5,808,000	
<b>TOTAL:</b>	<b>501,198,000</b>	<b>666,298,000</b>	<b>1,609,205,000</b>	

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory .*  
*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>REMARKS</b>
HEMTT TANKER, M978	4,480,000		2,900,000	
SINGARS RADIOS	1,736,000	17,890,000		
SINGARS CASCADE			7,300,000	
SINGARS - AIRBORNE			3,300,000	
CH-47 CRASHWORTHY FUEL CELLS	1,752,000			
HMMWV CONTACT MAINT TRUCK BOX	10,500,000			
AVCATT-ARMS AIRCRAFT SIMULATOR	5,000,000			
HEMTT WRECKERS	6,102,000		3,204,000	
PVS-7D NIGHT VISION GOGGLE	1,656,000	6,110,000	3,902,700	
AFIST (UPGRADE)	5,160,000			
M871A3 SEMI-TRAILER	7,200,000			
M1088 FMTV 5-TON TRACTOR	2,945,000			
D7 DOZER UPGRADES (RIPPER)	1,600,000			
HYDRAULIC EXCAVATOR (HYEX)	1,519,000			
BRADLEY MODS TO ODS		50,848,111		
RESERVE AUTOMATION SYSTEM		15,350,000		
HMMWV		17,350,000	2,870,000	
UH-60 BLACKHAWKS		57,850,000		
ENGAGEMENT SKILLS TRAINER		4,050,000		
HETS		2,340,000		
LASER MARKSMANSHIP TRAINER		8,350,000		
MULTI-ROLE BRIDGING COMPANY		15,350,000		
HEMTTS		17,550,000		
DISTANCE LEARNING		5,850,000		
FMTV MTV 5-TON TRUCK M1083			4,900,000	
METEOROLOGICAL MEASURING SYSTEM			1,455,000	
<b>TOTAL:</b>	<b>\$49,650,000</b>	<b>\$218,888,111</b>	<b>\$29,831,700</b>	

## Projected Equipment Transfer/Withdrawal Quantities

*NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>FY 2004 QTY</b>	<b>FY 2005 QTY</b>	<b>FY 2006 QTY</b>	<b>REMARKS</b>
<b>AIRCRAFT</b>					
HELICOPTER,ATTACK AH-64 (APACHE)	H28647			1	
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293		14		
<b>COMBAT COMMUNICATIONS</b>					
RADIO SET AN/PRC-112	R82903	118	202	31	
RADIO SET AN/VRC-119A (SINCGARS)	R83005			69	
RADIO SET AN/VRC-87A (SINCGARS)	R67160	3			
<b>CONSTRUCTION EQUIPMENT</b>					
GRADER,ROAD,MOTORIZED,SECTIONALIZED	J74886		9		
<b>GENERATORS</b>					
GENERATOR SET,DSL ENG,TM,10KW,60HZ,MTD ON M116 PU	G40744			10	
<b>MATERIAL HANDLING EQUIPMENT</b>					
TRAILER,PALLETIZED LOAD SYSTEM (PLS)	T93761	6			
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	1			
<b>MISSILES</b>					
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	9			
<b>OTHER PROCUREMENT</b>					
MINI EYESAFE LASER INFRARED OBSERVATION SET (MELIOS)	M74849	9	49	96	
NIGHT VISION GOGGLES AN/PVS-7E	N05482	2120	3283	1611	
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596		78	108	
<b>TACTICAL VEHICLES</b>					
REINFORCEMENT SET,MEDIUM GIRDER BRIDGE	C27309		1		
SEMITRAILER 5000 GAL POL	S73372	1	39	2	
SEMITRAILER,22-1/2 TON M871	S70027	4	77		
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859		24		
TRK 5 TON TRACTOR, FMTV M1088	T61239			239	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562		16		
TRUCK,CARGO,4X4,LMTV M1078	T60081		120		
TRUCK,CARGO,TACTICAL,W/W&W/W M985 (HEMTT)	T39654	9	3		
TRUCK,DUMP,20T,12 CY M917	X44403			12	
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	2	6	6	
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	12	14		
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048		24		
TRUCK,TRACTOR,LET M916	T91656		2	9	

## Projected Equipment Transfer/Withdrawal Quantities

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>FY 2004 QTY</i>	<i>FY 2005 QTY</i>	<i>FY 2006 QTY</i>	<i>REMARKS</i>
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494		107	97	
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093			16	
<b>WHEELED &amp; TRACKED COMBAT VEHICLES</b>					
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	1			
TRACTOR,FULL TRACKED,ARMORED M9 (ACE)	W76473	21	14	2	

## FY 2000 Planned vs Actual Procurements and Transfers

NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002. Procurement and NGREA columns reflect cost figures in dollars.

<i>Nomenclature</i>	<i>Equip No.</i>	<i>FY 00 Transfers</i>		<i>FY 00 Procurements</i>		<i>FY 00 NGREA</i>	
		<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>
<b>AVIATION SYSTEMS/MODS</b>							
UH-60L BLACKHAWK	H32361			102,840,000	90,871,000		
AH1F Mods	H44644			432,000	428,000		
Utility/Cargo Airplane MODS	VARIOUS			850,000	3,500,000		
Aircrew Integrated Systems	N/A				3,137,000		
Fuel Cells, CH-47D Helicopter	H30517					1,000,000	1,000,000
<b>CHEM/BIO EQUIPMENT</b>							
Alarm Chem Agent M8A1	A32355	2,300	2,300				
<b>CONSTRUCTION EQUIPMENT</b>							
Scoop Loader	L76556				487,000		
Hydraulic Excavator	VARIOUS			976,000	7,346,000		
Crush/Screen Plant 150TPH	F49673			5,519,000	2,050,000		
Roller Vibrator	S12916					462,000	462,000
<b>ELECTRONIC EQUIPMENT</b>							
SINGARS	VARIOUS	9,788	9,788			4,848,000	4,848,000
<b>OTHER PROCUREMENT</b>							
ACUS Mod Program	Z90300				1,900,000		
Soldier Enhancement Program Comm/Electronics	VARIOUS				3,645,000		
TSEC - Army Key Mgt Sys (AKMS)	VARIOUS			1,000,000	1,000,000		
Joint Stars (Army) (TIARA)	VARIOUS			54,784,000	16,500,000		
ISYSCON Equipment	Z99469				1,151,000		
Stamis Tactical Computers (STACOMP)	N/A			13,798,000	13,798,000		
Calibration Sets Equipment	VARIOUS			267,000	267,000		
Test Equipment Modernization (TEMOD)	VARIOUS			4,509,000	4,509,000		
Initial Spares - C&E	VARIOUS			1,089,000	1,043,000		
FAAD GBS	VARIOUS			38,379,000	48,257,000		
STRIKER C2 System	S50205				7,612,000		
Gun Laying Position System (GLPS)	G97730			7,465,000	6,358,000		
Adv Field Artillery Tact Data Sys (AFATDS)	VARIOUS			13,402,000	18,332,000		
FAAD C2	VARIOUS			10,594,000	10,546,000		
Forward Entry Device (FED)	D10788			8,925,000			
Meteorological Measuring System (MMS)	M35941					2,857,000	2,857,000
Artillery Accuracy Equip	VARIOUS			4,283,000			
Portable Inductive Artillery Fuze Setter (PIA	N/A				1,993,000		
Mod Of In-Svc Equip (Tac Surv)	N/A			3,000,000	1,800,000		
LOGTECH	N/A			1,496,000	1,496,000		
Automated Data Processing Equip	N/A			2,177,000	6,000,000		
Reserve Component Automation Sys (RCAS)	N/A			51,660,000	51,460,000		
Items Less Than \$5.0m (Const Equip)	VARIOUS			2,292,000			
Avenger System Summary	F57713			33,750,000			

## FY 2000 Planned vs Actual Procurements and Transfers

<i>Nomenclature</i>	<i>Equip No.</i>	<i>FY 00 Transfers</i>		<i>FY 00 Procurements</i>		<i>FY 00 NGREA</i>	
		<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>
<b>PETROLEUM EQUIPMENT</b>							
Semi-Trailer 5000 GAL	S10059			21,811,000			
Semi-Trailer 7500 GAL	S73119			4,124,000			
Family Of Tank Assemblies, Fabric, Collapsible	VARIOUS			444,000	444,000		
Labs, Petroleum & Water	VARIOUS			3,920,000			
Quality Surveillance Equipment	VARIOUS				1,655,000		
Distribution Systems, Petroleum & Water	VARIOUS				553,000		
Distribution Sys, Pet & Water	VARIOUS			553,000			
Pumps, Water And Fuel	VARIOUS			3,695,000	3,679,000		
<b>TACTICAL VEHICLES</b>							
Semi-Trailers, Flatbed:	VARIOUS				7,077,000		
Semi-Trailers, Tankers	VARIOUS				17,340,000		
Hi Mob Multi-purp Whld Veh (HMMWV)	VARIOUS			15,544,000	5,753,000		
Family Of Medium Tactical Veh (FMTV)	VARIOUS				8,360,000		
Family Of Heavy Tactical Vehicles (FHTV)	VARIOUS			90,669,000	89,634,000		
Truck, Tractor, Line Haul, M915/M916	VARIOUS			8,890,000	8,852,000		
Training Devices, Nonsystem	VARIOUS			45,142,000	2,000,000		
SIMNET/Close Combat Tactical Trainer	N/A			20,628,000			
Fire Support Combined Arms Tactical Trainer	N/A			17,336,000			
Close Combat Tactical Trainer	N/A				20,628,000		
Fire Support Combined Arms Tactical Trainer	N/A				16,416,000		
HEMTT Tanker, M978	T87243					3,990,000	3,770,000
HMMWV EOD Contact Maint Truck	S31232					1,092,000	1,312,000
HMMWV Contact Maint Truck	S25681					7,153,000	7,153,000
Semi-Trailer, 22.5-TON, M871	S70027			7,108,000			
<b>TACTICAL COMBAT VEHICLES</b>							
MLRS Launcher Systems	L44894			18,718,000			
MLRS Mods	L44894			226,000			
M2A2 Bradley Base Sustainment	F40375				80,720,000		
Tank Combat, M1A1	T13168	240	240				
<b>TRAINING EQUIPMENT</b>							
JANUS Battle Staff (16ws) New	N/A					960,000	960,000
JANUS Battle Staff (16ws) Upgrades	N/A					720,000	720,000
Armor Fully Integrated Simulation Trainer (AFIST)	N/A					3,360,000	3,360,000
UH-60 Maintenance Trainer	N/A					3,400,000	3,400,000
<b>WEAPONS</b>							
Howitzer, Med Sp Ft 155mm M109A6 (Mod)	H57642			6,259,000	20,000,000		
M19 40MM Grenade Launcher	M92362			12,103,000	13,393,000		
M16A4 RIFLE	R97175			4,595,000	4,576,000		
M4 Carbine, 5.56MM	R97234			5,309,000	5,066,000		
Armor Machine Gun, 7.62mm M240 Series	M92841			10,576,000	10,088,000		

## Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.

to identify equipment that is not the most desirable item of equipment.						
REQUIRED ITEM NOMENCLATURE	REQ ITEM EQUIP #	SUBSTITUTE ITEM NOMENCLATURE	SUBSTITUTE ITEM EQUIP #	FY 2004 QTY	DEPLOYABLE YES NO	
AIRCRAFT						
AIRPLANE,CARGO,C-12	A30062	AIRPLANE CARGO TRANSPORT:C-12C	A29744	1	X	
AIRPLANE,CARGO,C-12	A30062	AIRPLANE CARGO TRANSPORT:C-12D	A29812	2	X	
HELICOPTER,MEDICAL UH-1V (IROQUOIS)	H31872	HELICOPTER UTILITY: UH-1H	K31795	5	X	
HELICOPTER,OBSERVATION OH-58A (KIOWA)	K31042	HELICOPTER OBSERVATION: OH-58C	H31110	4	X	
HELICOPTER,UTILITY UH-1H (IROQUOIS)	K31795	HELICOPTER UTILITY: UH-1V	H31872	67	X	
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	HELICOPTER UTILITY: UH-1 MODELS	VARIOUS	13	X	
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361	HELICOPTER UTILITY: UH-60A	K32293	4	X	
COMMUNICATIONS EQUIPMENT						
RADIO SET (SINCGARS) SYSTEM	VARIOUS	VARIOUS 12 SERIES SYSTEMS	VARIOUS	18223		X
CHEMICAL DEFENSIVE EQUIPMENT						
ALARM, CHEMICAL AGENT, AUTOMATIC, M8A1	A32355	POWER SUPPLY: CHEMICAL AGENT AUTOMATIC ALARM	VARIOUS	1500	X	
MASK,CHEMICAL BIOLOGICAL M4C	M12418		NY0008	1	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418	MASK CBR: PROTECTIVE FIELD	M11895	69587	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418	MASK CHEMICAL BIOLOGICAL:COMBATVEHICLE M42	M18526	69	X	
MASK,CHEMICAL BIOLOGICAL M40	M12418	MASK: PROTECTIVE TANK	M10936	47	X	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	MASK CBR: PROTECTIVE FIELD	M11895	10	X	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	MASK CHEMICAL BIOLOGICAL:M4C	M12418	70	X	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	MASK: PROTECTIVE TANK	M10936	3797	X	
CONSTRUCTION EQUIPMENT						
COMPACTOR,HIGH SPEED	E61618	TAMPER VIBRATING TYPE: INTERNAL COMBUSTIONENGINE DRIVEN	V11001	1	X	
CRANE,WHEEL MOUNTED,20T	F39378		VARIOUS	10	X	
CRANE-SHOVEL,CRAWLER MOUNTED	F40474		VA2198	1	X	
CRUSH & SCREEN PLANT,75TPH	F49399	CRUSH SCREEN AND WASH PLANT:DSL/ELEC DRVNWHL MTD 150-225 TPH	VARIOUS	4	X	
GRADER,ROAD,MOTORIZED,10FT BLADE	J74910	GRADER ROAD MOTORIZED: DSL DRVN SECTIONALIZED	VARIOUS	9	X	
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852		CO0301	1	X	
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852		OK1910	1	X	
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852	GRADER ROAD MOTORIZED: DSL DRVN HVY (CCE)	G74783	20	X	
GRADER,ROAD,MOTORIZED,SECTIONALIZED	J74886	GRADER ROAD MOTORIZED: DSL DRVN HVY (CCE)	G74783	3	X	
VIBRATOR ROLLER	S12916	COMPACTOR HIGH SPEED: TAMPING SELF-PROPELLED (CCE)	3EA LINS	4	X	
ATEC CRANE	F43429	CRANE-SHOVEL TRK MTD: 20TW/BOOM CRANE 30FT W/BLK TKLE 30 FT	VARIOUS	15	X	



## Major Item of Equipment Substitution List

<i>REQUIRED ITEM NOMENCLATURE</i>	<i>REQ ITEM EQUIP #</i>	<i>SUBSTITUTE ITEM NOMENCLATURE</i>	<i>SUBSTITUTE ITEM EQUIP #</i>	<i>FY 2004 QTY</i>	<i>DEPLOYABLE YES NO</i>	
TRACTOR,FT,LS,DED,MED	W83529	TRACTOR FULL TRCKD LOW SPD:DSL MED DBP W/BULDOZ W/SCARIF WINC	23EA LINS	334	X	
TRACTOR,FULL TRACKED,ARMORED M9 (ACE)	W76473	TRACTOR FULL TRCKD LOW SPD:DSL MED DBP W/BULDOZ W/SCARIF WINC	W76816	6	X	
TRACTOR,FULL TRACKED,LOW SPEED	W76816	TRACTOR FULL TRCKD LOW SPD:DSL MED DBP W/BULDOZ W/SCARIF RIPP	12EA LINS	27	X	
<b>ELECTRICAL GENERATION</b>						
GENERATOR SET,DIESEL ENGINE,30KW	J36383	POWER PLANT ELEC TM: 30KW60HZ 2EA PU-406W/DIST BOX AN/MJQ-10	VARIOUS	41	X	
GENERATOR SET,DSL ENG,SKID MTD,3KW,60HZ,AC,120/208	G54041	POWER PLANT: DIESEL TRL/MTD10KW60HZ AN/NJQ-37	VARIOUS	1353	X	
GENERATOR SET,DSL ENG,TM,10KW,60HZ,MTD ON M116 PU	G40744	POWER PLANT ELEC TM: 5KW60HZ 2EA MTD ON M103A3 AN/MJQ-16	VARIOUS	13	X	
					X	
<b>OTHER PROCUREMENT</b>						
MINI EYESAFE LASER INFRARED OBSERVATION SET (MELIOS)	M74849	LASER INFRARED OBSERVATION SET: AN/GVS-5	L40063	330	X	
NIGHT VISION GOGGLES AN/PVS-5	N04456	VARIOUS NIGHT SIGHTS	VARIOUS	181	X	
NIGHT VISION GOGGLES AN/PVS-7B	N05482	VARIOUS NIGHT VISION DEVICES	VARIOUS	17501	X	
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	NIGHT SIGHT EQUIPMENT: (TOW2)	N04982	19	X	
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	NIGHT VISION SIGHT EQUIPSET: (TOW/GLLD NIGHT SIGHT)	A70349	2	X	
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	NIGHT VISION SIGHT TRIPODMOUNTED: AN/TVS-4	N15518	3	X	
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	VARIOUS NIGHT VISION DEVICES	VARIOUS	2419	X	
RADAR SET AN/TPQ-36(V)	R14148	RADAR SET: AN/TPQ-36(V)7	R14216	3	X	
<b>TACTICAL VEHICLES</b>						
TRAILER HEMAT M989A1 (MLRS)	T45465	VARIOUS SUBSTITUTES	12EA LINS	39	X	
TRANSPORTER,PALLETIZED LOAD SYS W/MHE (PLS)	T41067	VARIOUS SUBSTITUTES	13EA LINS	145	X	
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	TRUCK CARGO: HEAVY PLS TRANSPORTER 15-16.5TON 10X10 W/MHE W/E	T41067	81	X	
TRK 5 TON TRACTOR, FMTV M1088	T61239	VARIOUS TRACTORS - 5 TON	3EA LINS	517	X	
TRUCK 5 TON WRECKER FMTV M1089	T94709	TRUCK WRECKER: 5 TON 6X6W/WINCH W/E	X63299	12	X	
TRUCK 5 TON WRECKER FMTV M1089	T94709	TRUCK WRECKER: TACTICAL 8X8HEAVY EXPANDEDMOBILITY W/WINCH	T63093	1	X	
TRUCK CARGO LMTV M1079 W/E	T93484	TRUCK VAN: SHOP 2-1/2 TON6X6 W/E	X62340	2	X	
TRUCK CARGO MTV LWB M1085	T61704	TRUCK CARGO: 2-1/2 TON 6X6 XLWB W/E	X40283	39	X	
TRUCK CARGO MTV LWB M1085	T61704	TRUCK CARGO: 5 TON 6X6 XLWBW/E	X41105	1	X	
TRUCK CARGO MTV LWB M1085 W/W	T61772	TRUCK CARGO: 2-1/2 TON 6X6 XLWB W/WINCH W/E	X40420	10	X	
TRUCK CARGO MTV M1084 W/MHE	T41203	TRUCK CARGO: DROP SIDE 5TON6X6 W/E	X40794	12	X	

## Major Item of Equipment Substitution List

REQUIRED ITEM NOMENCLATURE	REQ ITEM EQUIP #	SUBSTITUTE ITEM NOMENCLATURE	SUBSTITUTE ITEM EQUIP #	FY 2004 QTY	DEPLOYABLE	
					YES	NO
TRUCK CARGO MTV M1084 W/MHE	T41203	TRUCK CARGO: DROP SIDE 5TON6X6 W/WINCH W/E	X40931	24	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	VARIOUS CUCV VEHICLES	6EA LINS	225	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	VARIOUS HMMWV VEHICLES	6EA LINS	557		X
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1038	T61562	VARIOUS M35 VEHICLES	3EA LINS	19	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	HMMWV SUBS	4EA LINS	1779	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	CUCV SUBS	6EA LINS	39	X	
TRUCK UTILITY CARGO/TROOP 1 1/4 TON M1097	T07679	800 Series 5 Tons and M35A2	5EA LINS	65		X
TRUCK,CARGO,10TON,W/LT CRANE (HEMTT)	T59278	HEMTT AND 5 TON SUBS	11EA LINS	154	X	
TRUCK,CARGO,4X4,LMTV M1078	T60081	TRUCK CARGO: 2-1/2 TON 6X6 W/E	X40009	210	X	
TRUCK,CARGO,4X4,LMTV M1078	T60081	TRUCK CARGO: 2-1/2 TON 6X6 W/WINCH W/E	X40146	20	X	
TRUCK,CARGO,4X4,LMTV M1078	T60081	TRUCK CARGO: DROP SIDE 2- 36162TON 6X6 W/E	X40077	12	X	
TRUCK,CARGO,5T,DROP SIDE WW	X40931	VARIOUS MODELS	12EA LINS	282	X	
TRUCK,CARGO,MTV W/E M1083	T61908	DROP SIDE 5TON6X6	5EA LINS	25	X	
TRUCK,CARGO,TACTICAL,W/W-LT CR (HEMTT)	T39518	VARIOUS HEMTT AND 5 TONS	13EA LINS	118	X	
TRUCK,DUMP,20T,12 CY M917	X44403	TRUCK DUMP: 5 TON 6X6 W/WINCH W/E	X43845	1	X	
TRUCK,DUMP,5T 6X6 WW WE	X43845	TRUCK DUMP: 5 TON 6X6 W/E	X43708	7	X	
TRUCK,DUMP,5T,6X6,W/E M929	X43708	TRUCK DUMP: 5 TON 6X6 W/WINCH W/E	X43845	56	X	
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	TRUCK LIFT FORK: DED 6000LBVARIABLE REACH RT AMMO HDLG	T48944	2	X	
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	TRUCK LIFT FORK: DSL DRVN10000 LB CAP 48IN LD CTR ROUGH TERRA	T49119	4	X	
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	HEMTT AND 5 TON SUBS	11EA LINS	120	X	
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	VERSIONS W/PODS/5 TON TRKS	23EA LINS	462	X	
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	TRUCK TRACTOR: HET 8X6 850GVW W/DUAL MIDSHIP WINCH(CS) W/E	T61035	37	X	
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	TRUCK TRACTOR: LET 6X6 660GVW W/W C/S	T91656	2	X	
TRUCK,TRACTOR,LET M916	T91656	TRUCK TRACTOR: MET 8X6 750GVW W/W C/S	T61171	2	X	
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	VARIOUS CUCVS	2EA LINS	193	X	
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	VARIOUS MODEL HMMWVS	5EA LINS	55		X
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	VARIOUS MODELS CUCVS	5EA LINS	23	X	
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	VARIOUS MODELS HMMWVS	4EA LINS	389		X
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	CUCVS	6EA LINS	4350	X	
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	OTHER MODELS OF HMMWV	8EA LINS	1244		X
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	TRUCK CARGO: TACTICAL 8X8HEAVY EXPANDED MOBILITY W/MED CRANE	T39586	1	X	
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	TRUCK WRECKER: 5 TON 6X6W/WINCH W/E	X63299	222	X	
SEMITRAILER 5000 GAL POL	S73372	SEVERAL VARIANTS	5EA LINS	120	X	

## Major Item of Equipment Substitution List

<i>REQUIRED ITEM NOMENCLATURE</i>	<i>REQ ITEM EQUIP #</i>	<i>SUBSTITUTE ITEM NOMENCLATURE</i>	<i>SUBSTITUTE ITEM EQUIP #</i>	<i>FY 2004 QTY</i>	<i>DEPLOYABLE YES NO</i>	
SEMITRAILER 7500 GAL POL	S73119	VARIOUS TRAILERS	FOUR LINS	45	X	
SEMITRAILER,22-1/2 TON M871	S70027	VARIOUS TRAILERS	VARIOUS	1495	X	
SEMITRAILER,FB,TRANSPORTR,34T	S70159	SEMITRAILER VAN: CARGO 6TON2 WHEEL W/E	FOUR LINS	50	X	
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859	SEMITRAILER LOW BED: HEAVY EQUIPMENT TRANSPORTER 60 TON W/E	S70661	39	X	
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594	VARIOUS MODELS	4EA LINS	100	X	
TACTICAL FIRE TRUCK	H56391	VARIOUS MODELS	7EA LINS	12	X	
					X	
<b>TRACKED &amp; WHEELED COMBAT SYSTEMS</b>						
ARMORED PERSONNEL CARRIER M113A1/2	D12087	CARRIER COMMAND POST: LIGHTTRACKED	D11538	4	X	
ARMORED PERSONNEL CARRIER M113A1/2	D12087	CARRIER PERSONNEL FULL TRACKED: ARMORED (RISE)	C18234	54	X	
ARMORED PERSONNEL CARRIER M113A3	C18234	CARRIER CARGO: TRACKED 6TON	D11049	3	X	
ARMORED PERSONNEL CARRIER M113A3	C18234	CARRIER COMMAND POST: LIGHTTRACKED	D11538	36	X	
ARMORED PERSONNEL CARRIER M113A3	C18234	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	1252	X	
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	20	X	
ARMORED PERSONNEL CARRIER,FISTV M113	C12155	CARRIER SMOKE GENERATOR:FULL TRACKED ARMORED	C12815	1	X	
CARRIER,CARGO,FT,6 TON M548	D11049	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	2	X	
CARRIER,COMMAND POST M577A1	D11538	CARRIER ARMORED COMMAND POST: FULL TRACKED	C11158	1	X	
CARRIER,COMMAND POST M577A1	D11538	CARRIER PERSONNEL FULL TRACKED: ARMORED	D12087	4	X	
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	CAVALRY FIGHTING VEHICLE:M3	C76335	39	X	
CAVALRY FIGHTING VEHICLE,M3A0 (BRADLEY)	C76335	FIGHTING VEHICLE: FULL TRACKED CAVALRY HISURVIVABILITY (CFV)	F60530	6	X	
HOWITZER,MEDIUM,SP,155MM M109A6 (PALADIN)	H57642	HOWITZER MEDIUM SELF PROPELLED: 155MM	K57667	64	X	
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	CAVALRY FIGHTING VEHICLE:M3	C76335	3	X	
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	INFANTRY FIGHTING VEHICLE: M2	J81750	132	X	
LAUNCH,M60 TANK CHASSIS	L43664	AVLB M48 SERIES & OTHER TRACKS	VARIOUS	11	X	
RECOVERY VEHICLE,FT,MDM M88A1	R50681	RECOVERY VEHICLE FULL TRACKED: LIGHT ARMORED	R50544	23	X	
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	TANK COMBAT FULL TRACKED:105 MM M1 (ABRAMS)	T13374	155	X	
<b>WEAPONS</b>						
RIFLE,5.56 MM M16A2	R95035	RIFLE 5.56 MILLIMETER: M16A1	R94977	79674		X

# **ARNG** **Significant Major Item Shortages**

Table 8

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service.*

<b>PR</b>	<b>NOMENCLATURE</b>	<b>TOTAL REQ'D</b>	<b># UNITS SHORT</b>	<b>UNIT COST</b>	<b>TOTAL SHTG COST</b>	<b>RATIONALE / JUSTIFICATION</b>
1	HMMWV	41,654	10,488	77,000	807,576,000	Light 4x4, high mobility, diesel powered vehicle that uses a common chassis. Fills shortages in new activations and purges the fleet of the obsolete CUCV no longer in the Army inventory.
2	SINCGARS	61,815	26,609	14,000	372,526,000	Procures SINCGARS ASIP radios required to satisfy Total Force requirements. Completes ARNG requirement and removes obsolete VRC 12 Family of radios.
3	Night Vision Goggles PVS-7D	201,000	156,673	3,500	548,355,500	Fills shortages in high priority, eSBs and divisional units and replaces the obsolete PVS-5. One of the primary mobilization challenges for Homeland Defense and overseas contingencies.
4	UH-60 Black Hawk Helicopter	685	148	14,000,000	2,072,000,000	Funding procures required UH-60s to fill vacancies left by retiring UH-1s and begins conversion of utility fleet to multi function battalion structure.
5	HEMTTs (Wrecker and Tanker)	3,128	1,159	300,000	347,700,000	Fills the shortfall of wreckers and 5k gal tankers for MLRS and Aviation units. The ARNG projects to be short 272 ea tankers and 359 ea wreckers after the Army ends procurement in FY 08.
6	Advanced Field Artillery Tactical Data System AFATDS -	1,773	1,083	200,000	216,600,000	AFATDS provides fully automated support for planning, coordination and controlling joint fires for close support and deep operations. The system is used at all echelons from the platoon operations center to the corps fire support element.
7	Family of Tactical Vehicles (FMTV)	34,287	31,673	150,000	4,750,950,000	Consists of a common truck chassis that is used for several vehicle configurations in two payload classes and two tactical trailers. Procures vehicles that will displace obsolete vehicles from the inventory. One variant consists of the M1088 5-ton tractor which is compatible with the M871A3 trailer.
8	M871A3 Semi-Trailer 22 1/2-Ton	5,057	1,923	35,000	67,305,000	Procures M871A3 trailers to fill existing shortages in units at all levels. This trailer is the only trailer that is configured for the FMTV M1088 5-ton tractor. Allocation is 120ea trailers per transportation company.
9	Forward Area Air Defense Command & Control (FAAD C2I)	18	14	8,000,000	112,000,000	Command and control center for short range air defense. Requirement is for 9 ea corps level battalions, and 8 ea divisional battalions.
10	M22 Chemical Alarm Dectector (ACADA)	19,364	19,324	10,000	193,240,000	An advanced point-sampling, chemical-agent alarm system. Man-portable, operates independently after system start-up. Replaces the M8A1 Alarm as a survey instrument.
	Total:				9,488,252,500.00	

### III. UNITED STATES ARMY RESERVE OVERVIEW

#### a) Current Status of Equipment

(1) General Overview: Fiscal Year 2002 marked a year of widespread changes within the Armed Forces. Terrorist threats based on the events of 11 September 2001 have redefined the priorities within the National Defense Strategy. These events have demonstrated that both Defense Transformation and, more specifically, Army Transformation are critical to meet the wide array of potential threats in an uncertain future.

The Army has a nonnegotiable contract to fight and win the Nation's wars. Future Army missions may include humanitarian assistance, disaster relief, peacekeeping operations and conflicts involving the potential use of weapons of mass destruction. The support and sustainment of our Army is critical to its success and survival on the battlefield of the 21<sup>st</sup> Century. The Army Reserve is the primary source of Combat Support/Combat Service Support (CS/CSS) units for the Army at echelons above corps. Army Reserve services and support forces that are lighter, more deployable, and more agile are necessary to support the transformed force with the same characteristics. Modern equipment is the key to Army Reserve readiness, adequate funding for new equipment is essential.

The focus of funding during the Fiscal Years (FY) 2004-2009 Program Objective Memorandum (POM) has been directed to support Transformation and higher priority programs resulting in reduced funding to support recapitalization and modernization of our current force. This has a direct impact on equipping the Army Reserve. The Army Reserve is equipped as a result of direct purchases of new equipment, rebuilding older systems, modernization, and limited cascading of equipment from the active Army.

Equipment has traditionally been provided to units based on their wartime mission, with the most modern equipment going to early deploying units. Units that deploy later generally rely on older equipment. However, later deploying units for an overseas crisis could become the first deployed for a peacetime engagement or natural disaster. Since recent world events indicate that the Army will continue to support a wide variety of small-scale contingencies, often requiring more CS/CSS units than combat units, attention on support forces must be considered a high priority to meet the full spectrum of potential missions. The Army Reserve requires a steady funding rate to halt the erosion of readiness and to ensure interoperability with the Objective Force.

In the last ten years, the Army Reserve has averaged less than 6% of the annual Service Procurement (P-1R) Projection. At the same time, the Army Reserve provides 31% of the CS and 45% of the CSS assets at echelons above corps to support the war fight. The Army Reserve equipment funding requirements shortfalls impact mission success for the warfighting Combatant Commanders. In a theater with a mature, resource rich, economic environment, acquisition and/or contracting of host nation support and/or commercially available and mission compatible equipment and services may mitigate such shortfalls. However, equipment shortfalls in the Army Reserve can have major impacts in theaters with an immature and austere economic

environment, and where host nation support, acquisition and contracting from commercial sources are neither available nor reliable.

Under the Army Transformation Plan the legacy, or current force, will remain until 2032, with certain current systems transitioning to the future Objective Force. To sustain the current force capability, many of these systems require recapitalization. Current Army recapitalization programs do not include many CS/CSS systems vital to Army Reserve potential missions. Today, over 75% of Army Reserve systems exceed the Department of Defense's half-life goals.

## (2) Status of Equipment

(a) Equipment On hand: The Army Reserve has the greatest requirement in achieving the degree of parity in CS/CSS systems necessary to fully support the Army Transformation and Modernization Plans and the National Military Strategy. The Army Reserve has 93% of the required Pacing and Equipment Readiness Code A items of equipment on hand. This percentage represents current equipment on hand rather than actual modernization requirements. The equipment on hand percentage does include substitute items that are authorized in accordance with regulatory guidance for reporting equipment. As a result, the Army Reserve has some degree of obsolete or incompatible equipment, with varying capability problems with the Active component (AC).

With the reporting criteria changes brought about by the implementation of the Strategic Readiness System and the Balanced Score Card, anomalies in the reporting system will change and, it is anticipated, equipment on hand metrics will show a downward trend. This may be attributed to many factors ranging from metric changes to losses of equipment through retirement. Other significant factors are the decrease in the National Guard and Reserve Equipment Appropriations and Army procurement deliveries. The Army Reserve anticipates significant equipment shortages through FY 2004 and beyond.

(b) Average Age of Major Items of Equipment: Although equipment on hand readiness percentages remain relatively high, several major items of equipment are near or past their economical useful life. A few examples include the current light medium and medium tactical truck fleets, materiel handling and engineer equipment. Aging equipment means operational and sustainment costs will continue to increase while equipment serviceability rates decrease, thereby negatively impacting unit readiness. Current recapitalization initiatives and competing resources make it difficult to recapitalize Army Reserve systems. The Army's recapitalization plan for 17 systems does not allow the Army Reserve to achieve the half-life goal. The Army Reserve must develop comprehensive repair, overhaul, rebuild, and conversion programs to extend the service life for existing equipment to maintain readiness and ensure mission accomplishment.

(c) Compatibility of Current Equipment with the AC: The analysis of current equipment in the Army Reserve indicates some degree of incompatibility with the AC. In many instances, this incompatibility is a result of cascading older equipment models from the AC as they received newer more modern equipment. Although this practice improves equipment on hand readiness, the cascading of older equipment creates a host of maintenance and compatibility

challenges, to include lack of Army training programs for mechanics and operators, the establishment of separate repair parts inventories, and special tools and test equipment unique to each equipment model. The Army Reserve also must establish and provide costly training programs on this older less modern equipment in order to maintain personnel proficiency. Current resource constraints restrict sustainment efforts required to properly maintain or upgrade this older and less compatible equipment.

The Army Reserve must be modernized to keep pace with the requirements of Army Transformation. Equipment modernization, variance in operational characteristics, and logistical support requirements decrease pure integration with the AC. From a purely economic standpoint, modernization of Army Reserve equipment reduces associated requirements (training, spares, ammunition, etc.) needed to maintain a capability provided by an assortment of modern and legacy systems. As a result of an Active and Reserve component equipment compatibility study completed in FY 2000, the following equipment, while not obsolete, is less capable and more maintenance intensive:

Commercial Utility Cargo Vehicle	40-Ton Crane
Compactors, Plate/High-Speed	Materiel Handling Equipment
3/5/10 KW Generators	Yard Truck
Trailers Over 5-Ton	Bridge Transporter
4K Forklifts, Rough Terrain	Fire Truck
2.5-Ton Truck (M-35 Series Trucks)	25-Ton Cranes
Maintenance Contact Truck	Medical Sets
Armored Vehicle Launched Bridge	Medium Girder Bridge
5-Ton Truck Family	5-Yard Scoop Loader
75-Ton, Crushing Screening and Washing Plant	

Additional procurements are required to offset Army funding shortfalls and ensure the Army Reserve's first deploying units are equipped with the best mix of equipment. Because the Reserve components deal with such protracted lead times and constrained resources, creativity in developing ways to stretch these resources and extend the economic life of existing equipment is essential. The Army Reserve increasingly relies on limited overhaul and re-build programs for equipment to retain mission capabilities. Cross-leveling and upgrading equipment through refurbishment programs must be used to meet current mission requirements and offset funding constraints.

Cascaded CS/CSS equipment from the AC to the Army Reserve is very minimal. Future planned force structure changes indicate no change to this trend. However, with the conversion of ARNG combat structure to CS/CSS forces, there will be a greater demand for these limited resources.

#### (d) Maintenance Issues

1. Field Level Maintenance: The operational readiness rate in the Army Reserve is 93% for reportable equipment. However, this percentage represents less than 10% of

all Army Reserve equipment. Readiness rates remain high because commanders place most of their managerial emphasis on maintaining readiness of the reportable equipment at the expense of non-reportable equipment. It is estimated that 44% of all Army Reserve equipment has deferred services or is not receiving scheduled services due to shortages of civilian and military maintenance technicians, time, and funding.

Army Reserve maintenance activities, called Area Maintenance Support Activities (AMSA), have been established to perform unit-level maintenance beyond the unit's capability to perform during scheduled training assemblies. The maintenance activities are designated as (G) for ground support equipment, (W) for watercraft, or (G/W) for ground and watercraft. Average staffing for an AMSA is 10-12 personnel. Currently, AMSA shops are staffed at 50% of authorizations. Simply stated, the Army Reserve is currently facing a 4.1 million man-hour maintenance backlog, which translates into a \$373M funding shortfall since our last manpower survey, conducted in FY 2001, with only a 7% Congressional increase in manpower. The Army Reserve has developed a program to modernize and reduce the numbers of its facilities. They have done this by leveraging commercially available services and acceptable practices to reduce the backlog and the annual cost of the equipment and personnel resources needed to maintain Army Reserve equipment readiness. This program is called Army Reserve Logistics XXI and requires a capital investment of \$175M.

In addition to AMSAs, Army Reserve Equipment Concentration Sites contain a maintenance branch with an area support mission, along with a storage branch for equipment that goes beyond the capability of an owning unit commander to store, maintain, or utilize at home station. To reduce maintenance requirements and increase the service-life of equipment, the Army Reserve is pursuing the use of Controlled Humidity Preservation (CHP). This program places unit sets of equipment in CHP at storage sites collocated at strategic locations near ports of embarkation, including overseas ports. It will not only reduce Army Reserve maintenance costs, but support overseas training objectives of the Army Reserve and the war fighting Combatant Commanders, while increasing the readiness and speed of deployment of high demand Army Reserve units to the war fight. The initial capital investment required to execute this program is \$256M.

2. National Level Maintenance: Due to limited funding, the Army Reserve has been forced to become adept at developing alternatives to stretch funds and extend the life of existing equipment. The Army Reserve relies on limited overhaul and re-build programs of existing equipment to retain mission capabilities. Upgrading existing equipment, through rebuild initiatives and depot maintenance programs is used to extend the service life of equipment.

In partnership with industry, the Army Reserve is working to infuse commercial concepts into combat service support improvement initiatives. This will allow the Army Reserve to use commercial industry for the manufacture of combat service support equipment and follow-on rebuild or overhaul. The Army Reserve understands the need to optimize all equipment-funding sources and encourages the Army to design equipment with the intent to remanufacture. All new equipment procurements should include both prognostics, as well as, diagnostics as part of its design and manufacture.



3. Sustainment Initiatives: The following initiatives are examples of how the Army Reserve has partnered with industry to design and implement total rebuild and refurbishment programs.

### **M109A4 Shop Van**

The M109A4 Shop Van Truck is designed to function as a mobile repair shop van that can also be used to transport special equipment requiring protection from dirt, dust, and moisture. In February 2000, the Army Reserve successfully completed two M109A4 Shop Van Proof of Principle upgrades at their Installation Materiel Maintenance Activity facility at Fort McCoy, WI. The Army Reserve utilizes the Maintenance Training Program to modify these shop vans. The original M109A3 bodies were removed from their M35A2 truck chassis. The chassis underwent an extended service program, while the van body was disassembled, modified, and upgraded, before reinstalling it onto the 2½-ton extended service program M35A3 chassis, thus creating the new M109A4 configuration. The program is about 30% completed.



### **M878/M878A1 5-Ton Tractor**

The M878/M878A1, 5-ton tractor is designed for terminal yard operations such as spotting and moving trailers. The Army Reserve requires 141 M878 Tractors and has 36 on hand. NGREA resources will purchase an additional 59 M878A2 tractors between FY 2002 and 2004. Ottawa Truck, the original manufacturer, conducted a proof of principle to install a new cab, controls, instrumentation, and wiring on the older model of tractor (1978), which will extend the projected service life. The Army Reserve rebuilt a portion of the fleet's M878s in FY 2002 at Red River Army Depot.



### **Military Adaptation of Commercial Item (MACI) Fire Truck**

The MACI truck, Model 2500L, is designed to conduct aircraft crash, fire and rescue operations, and is also capable of fighting ground and structural fires. Extensive analysis of this fire fighting truck (FFT) revealed that the overall condition of the fleet was deteriorating, a shortage of spare parts existed, and performance problems continued to plague the vehicle.



Based on these issues, and the necessity to continue to use at least a portion of these vehicles until new fire trucks are introduced into the inventory, the Army Reserve planned and conducted a proof of principle upgrade and repair of a single FFT. Objectives of the upgrade proof of principle included improving operational capabilities, effectiveness, and safety. The

cost of the repair/upgrade of the proof of principle FFT is approximately 17-21% of the cost of a new Tactical FFT. The Army Reserve completed the program in FY 2002.

### **Lubricating and Servicing Unit (Lube Unit)**



The lubricating and servicing unit is a trailer-mounted, self-contained, gasoline-powered unit equipped for heavy duty servicing and lubrication of all types of equipment and components. The Army Reserve lube unit fleet was manufactured in the late 1960s to early 1970s and has exceeded its projected 20-year service life. The Army Reserve is authorized 159 units and currently has 125 on hand.

The findings of a recently conducted feasibility assessment propose initiating a two-phase proof of principle. The first phase will replace the gasoline engines and exhaust systems with diesel engines and new exhaust systems. The second phase proposes overhauling the on-hand fleet by using the first phase product and upgrading, replacing, or rebuilding all deficient systems.

### **4,000-LB Forklift**

There are three models of the 4,000-lb forklift, the Materiel Handling Equipment (MHE)-237, MHE-270 and MHE-271 forklifts. The MHE-237 forklift was manufactured between 1981 and 1983 and already exceeds its expected 15-year economic useful life. The other models were manufactured between 1995 and 1996. The Army Reserve requirement is 726 forklifts and has 670 on hand. By FY 2005, the Army Reserve is projected to need 690. It is not likely that additional MHE-237s will be cascaded to the Army Reserve. Consequently, a shortfall of about twenty 4000-lb forklifts is projected throughout FY 2003. The Army Reserve has initiated a proof of principle partial overhaul of one MHE-237 forklift to determine the economic feasibility of the program and document overhaul procedures, and to assess the most cost effective method of sustaining the 4,000-lb forklifts in the future. During FY 2002, 140 were rebuilt at Red River Army Depot.



### **10,000-LB Forklift**

The 10,000-lb (10K) forklift has a capacity of 10K pounds, a 48-inch load center, and can lift a load to a maximum of 121.6 inches. It has an estimated useful life of 15 years. There are 423 of these forklifts on hand in the Army Reserve. The forklift was manufactured and fielded from 1979 to 1985 and is past its expected 15-year life span. The All Terrain Lifter Army System (ATLAS) replaces this forklift. The Army Reserve requirement will be 1,009 ATLAS forklifts by 2007, but is only scheduled to receive 762. Consequently, 247 of the older 10K forklifts are needed to meet



requirements. The Army Reserve implemented a program to evaluate the 10K forklift fleet and to investigate an extended service program. As US Army Tank Automotive and Armament Command fields new forklifts, excess forklifts can be cycled through the maintenance facility for repair and reissue.

(e) Modernization Programs and Shortfalls: Modernization is a continuous process of integrating new doctrine, training, organizations and equipment. Equipment programs are placed into three basic categories: (1) Modernization: The development and/or procurement of new systems with improved warfighting capabilities; (2) Recapitalization: The rebuild and selected upgrade of currently fielded systems to ensure operational readiness and a near zero time and mile system; (3) Maintenance: Repair or replacement of major end items parts, assemblies, and sub-assemblies that wear or break. As the Army modernizes its weapon systems, the Army's highest priority equipment, legacy systems are often redistributed to the Reserve component. The majority of this equipment is combat arms related and not authorized in the Army Reserve inventory. The Army's modernization strategy should focus on developing and procuring CS/CSS systems that provide increased mobility, survivability, and agility to ensure all classes of supply and all required services are available to support maneuver and supporting forces where, when, and in the quantities needed. This modernization strategy must include Army Reserve systems in the recapitalization effort and the increase in sustainment funding to assist in the maintenance of these CS/CSS systems.

Combat support and combat service support transformation is a vital link to the Army Transformation Plan and the Army Reserve is the main provider of this capability. It is critical that equipment programmed for receipt in the Reserve procurement exhibit (P-1R) (*Table 3*) procured and distributed as planned. The Army must continue to modernize the RC units along a timeline that ensures the RC remains interoperable and compatible with the AC. Increased operational tempo and diversion of funds have stretched the useful life of equipment and reemphasized the need for recapitalization and replacement of various major end items, parts, assemblies, and subassemblies.

The following equipment reflects some of those items that are most critical to the Army Reserve in supporting Army requirements. These requirements are high dollar items that meet planned force structure initiatives of TAA 07 and 09:

### **Joint Biological Point Detection System (JBPDS)**



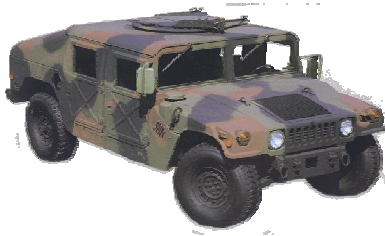
The JBPDS is a semi-automated biological agent detection/identification suite mounted on a dedicated heavy HMMWV utilizing multi-complimentary bio-detection technologies. It provides a rapid and fully automated detection, identification, warning, and sample isolation of high threat biological warfare agents. Capabilities include 12-hour continuous point detection and identification and it can operate on man-portable, fixed-site, vehicle, and ship platforms. The total Army Reserve requirement is 175 at \$1.2M each. The Army Reserve unfunded requirement is \$162M.

### **Family of Medium Tactical Vehicles (FMTV)**

The Family of Medium Tactical Vehicles (FMTV) will replace obsolete and maintenance-intensive trucks currently in the medium tactical vehicle fleet. Typical missions include: line haul, local haul, unit mobility, unit re-supply and other missions in the combat, combat support and combat service support role. The FMTV consists of a common truck chassis that is used for several vehicle configurations in two payload classes. The Light-Medium Tactical Vehicle is available in van and cargo variants and has a 2.5-ton payload capacity. The Medium Tactical Vehicle has a 5-ton payload and consists of the following models: cargo, tractor, wrecker, and dump truck. The total Army Reserve requirement is 13,329. There are currently 1,623 FMTV projected for the Army Reserve in POM 04-09. The Army Reserve has 392 FMTV with an unfunded requirement of 11,166 FMTV. The Army Reserve has a \$1,563,240,000 funding shortfall of FMTV. This system is one of the Army Reserve's highest equipment priorities.



### **High Mobility Multipurpose Wheeled Vehicle (HMMWV)**



The HMMWV provides a common light tactical vehicle capability in a wide variety of environments. The HMMWV is produced in several configurations to support weapon systems, command and control systems, field ambulances, troop and general cargo transport, and replaces the Commercial Utility Cargo Vehicle (CUCV). The average cost of the HMMWV is \$64,500 and \$147,000 for an up-armored HMMWV. The Army Reserve requirement for both models is 17,553. There are currently 1,383 HMMWVs projected in POM 04-09. Total shortfall is 5,275. The Army Reserve un-funded requirement is \$400,900,000.

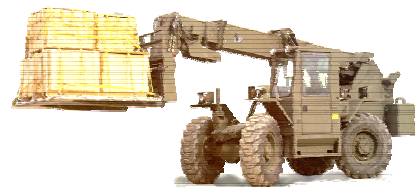
### **AN/PRC 138B Improved High Frequency Radio (IHFR)**



The 138B IHFR belongs to a family of combat net radios with a primary role of voice transmission for battle command communications. The 138B is designed to provide secure, long-range data and voice transmissions in a Joint tactical environment. The Army Reserve requirement is 1,750, the shortfall is 1,344. The total un-funded requirement is \$57,138,816.

### **All Terrain Army Lifting System (ATLAS)**

The ATLAS is a self-deployable rough terrain, manually operated forklift capable of operating efficiently in a wide variety of environmental conditions. The ATLAS lifts





10,000 lbs and can stuff and un-stuff various sized containers. The Army Reserve requirement is 946 at a cost of \$100,199. There are 304 ATLAS on-hand. The Army Reserve is projected to receive 436 in POM 04-09. The Army Reserve has an unfunded requirement of \$6,122,139.

### **Container Assembly Refrigerated 9K BTU**



The Container Assembly Refrigerated provides mission-critical refrigeration capability at forward areas for specialized military units. It is used to transport perishable rations for field feeding units and human remains for hospital/mortuary affairs units. The Army Reserve requirement is 312 at a cost of \$58,326. The Army Reserve has a shortage of 148 containers and an unfunded requirement of \$8,632,248.

### **Deployable Medical Systems (DEPMEDS)**

The DEPMEDS family provides deployable hospitals with standard medical care equipment and consists of medical components, sets and medical equipment to provide current technology and life-saving clinical support for soldiers in the Theater of Operations. Shortages of DEPMEDS components in the Army Reserve are Medical Materiel Sets for triage/emergency/pre-operation, operating room, and post-operation/intensive care unit. Total requirement is 361 systems. Unfunded requirement is \$21,922,000.



### **Semi-Trailer Flatbed Breakbulk 22.5 Ton M871A3**



The 22.5-Ton Trailer is a tactical dual-purpose trailer designed to haul breakbulk cargo and containers over primary, improved or un-improved, or secondary roads. It is the principal hauler for Army Reserve Transportation Companies. The Army Reserve is required 1707 trailers and has 1266 older M871A1 and A2 models on-hand. The cost per trailer is \$35,000. The Army Reserve is purchased 420 trailers with NGREA and Congressional add funding. The total unfunded requirement \$735,000.

### **Movement Tracking System (MTS)**

MTS is based on evolution of warfighting doctrine that calls for increased maneuverability and enlargement of the battle area. This requires situational awareness not only for combat leaders, but also for those in support. It gives the Army Reserve logistician near-real-time, in-transit visibility of vehicles and their cargos. The Army Reserve has a requirement of 10,573 systems at a cost of \$12,000 each. The Army will purchase 708 Movement Tracking Systems with FY 2003 Congressional plus-up. The Army Reserve has an unfunded requirement of \$118,380,000.



### **Rough Terrain Container Handler (RTCH)**



The 53K RTCH is a non-developmental military unique item with a modified commercial front lift truck capable of lifting, moving and stacking containers with an increased lift capacity of 3,000 pounds over the present system. This improved container handler is capable of operating on beaches, unimproved and improved surfaces, and can stack containers three high. The total Army Reserve requirement is 275 at \$525,000 each; on-hand is 32. The Army Reserve is projected to receive 122 in POM 04-09. The Army Reserve unfunded requirement is \$63,525,000.

(f) Overall Equipment Readiness: Army Reserve readiness is improving at a rate slower than the AC primarily due to the lower equipment fielding priority of Army Reserve units. As a result, some early deploying Army Reserve units are short mission essential equipment that prevents them from meeting equipment on hand readiness criteria. The Army Equipping Policy requires units to be fielded in a “first-to-fight, first-to-support” basis, yet Army Order of Precedence and operational requirements often divert assets that are critical to Army Reserve equipment shortages.

As previously stated, the Army Reserve has 93% of mission essential items on hand. When authorized substitutes are excluded, the Army Reserve has 87% of required pacing items, and 87% of Equipment Readiness Code A items. These substitutes, while authorized, are often less capable. Upgrading existing equipment through rebuild initiatives has extended the life of some items, freeing funds to purchase other required items. Army Reserve modification programs have been the front-runners in developing new and innovative ideas for equipment modernization. The Army Reserve continues to rebuild, upgrade, and overhaul equipment by partnering with industry and employing Army Reserve service members to enhance training.

In FY 2002, the Army Reserve rebuilt the following systems to enhance equipment readiness:

528 - High Mobility Multi-Purpose Wheeled Vehicles	\$13.6M - Various Watercraft & Communications Equipment
19 - Tactical Fire Trucks	131 - 5-Ton Cargo Trucks
122 - 34-Ton Trailers	250 - 4K Forklifts
71 - 5-Ton Tractors	18 - Yard Tractors
32 - 5-Ton Dump Trucks	47 - 10K Forklifts
6 - Lube & Service Units	25 - 25-Ton Cranes
855 - Chemical Alarms	4 - HEMTT Fuel Tankers

The Army Reserve’s acquisition plan for purchasing new equipment with NGREA is in line with known Army modernization plans. The following equipment was purchased with NGREA funds and delivered in FY 2002.

CH-47D Chinook Helicopter  
Rough Terrain Container Handler  
M915A4 Truck Tractor Line-Haul  
Yard Tractor  
Family of Medium Tactical Vehicles  
All Terrain Lifting Army System  
Forklift

HEMTT Common Bridge Transport  
HMMWV Contact Maintenance Trucks  
Night Vision Goggles  
Hydraulic Excavators  
Modern Burner Units  
High Mobility Multi-Purpose Wheeled  
Vehicle

The following equipment was purchased with NGREA funds during FY 2002 for delivery in future fiscal years.

Fuel System Supply Point  
Flatbed Semi-Trailer

Engineer Inflatable Boat  
Laser Marksmanship Training System

(g) Other Equipment Specific Issues

1. Tactical and Support Vehicles

a. The current status of the light medium 2.5-ton, and medium 5-ton tactical wheeled vehicle fleet continues to be a major concern for the Army Reserve. In FY 1998, the Army eliminated the 2.5-ton and 5-ton cargo truck extended service program and moved the resources to the FMTV program. Based on recent Congressional actions, migration of dollars from the extended service program, and planned Army procurements, the Army Reserve should receive 4,730 of its required 11,767 systems by FY 2007. To date, the Army Reserve has received less than 10% of this 4,730 vehicle commitment.

b. The Army Reserve continued modernization of its HMMWV contact maintenance truck fleet during FY 2002, committing \$250K in FY 2001 for more of the contact maintenance shelter portion of these vehicles.

c. The continuing shortfall of HMMWV prompted the Army Reserve to commit \$9.1M for 152 M1097A2 HMMWV to be distributed during FY 2002-20003. Army procurement of these vehicles for the Army Reserve satisfies only interchange requirements, such as part of a communication system or a smoke generation unit.

2. Communication-Electronic Equipment: The Army Reserve, while maintaining 13% of the Army's go to war signal capability, requires extensive support to bring signal units into the 21<sup>st</sup> Century. The Army Reserve requires satellite terminals and position locating systems to remain mission capable and compatible with AC signal units. It is essential that Command, Control, Communication and Computer (C4) modernization equipment be fielded concurrently to the Army Reserve and AC to ensure a totally seamless digitized force.

Major systems projected for receipt by the Army Reserve in FY 2002 and beyond as a result of Army Procurement (P1R), NGREA or modification/ rebuild programs include:

Family of Medium Tactical Vehicles  
HEMTT Fire Trucks  
M109 Shop Vans  
SINCGARS Radios  
C-12 Cargo (MODS)  
Semi-Trailer, Tank 5K  
Night Vision Devices  
Rough Terrain Container Crane  
Hydraulic Excavator  
Semi-Trailer, 22.5 T, M871A3

Vibratory Roller, Types I & II  
AVLBs MLC 70 Upgrades  
M101A1 Trailers to M101A3  
M967A1 Fuel Tankers  
M915A3, Truck Tractor Line-Haul  
Palletized Loading Systems  
Generator Sets, Multiple  
Rough Terrain Container Handler  
Yard Tractor, M878A2  
High Mobility Multi-Purpose Wheeled Vehicle

b) Changes Since Last NGRER: The Army Transformation process redefines and complements existing modernization plans. The Army Reserve understands the unique requirement for maximizing all equipping sources, such as Army Procurement (P-1R), NGREA, cascading of equipment from the AC, and depot maintenance.

The NGREA is an invaluable tool, making resources beyond the President's budget available to the Army Reserve. It offers the most flexible and direct method of procuring modern CS/CSS equipment. It also enhances equipment interoperability with the AC through modernization while increasing equipment on-hand readiness percentages.

Army CS/CSS transformation has dominated the equipping arena since the last NGRER. Efforts within the Army Reserve continue to affect vital logistics enablers required to support transformation. For example, the purchase of 41 ATLAS forklifts procured by NGREA is necessary to activate modular ammunition structure. The Army Reserve provides 72% of this capability in support of the joint warfight.

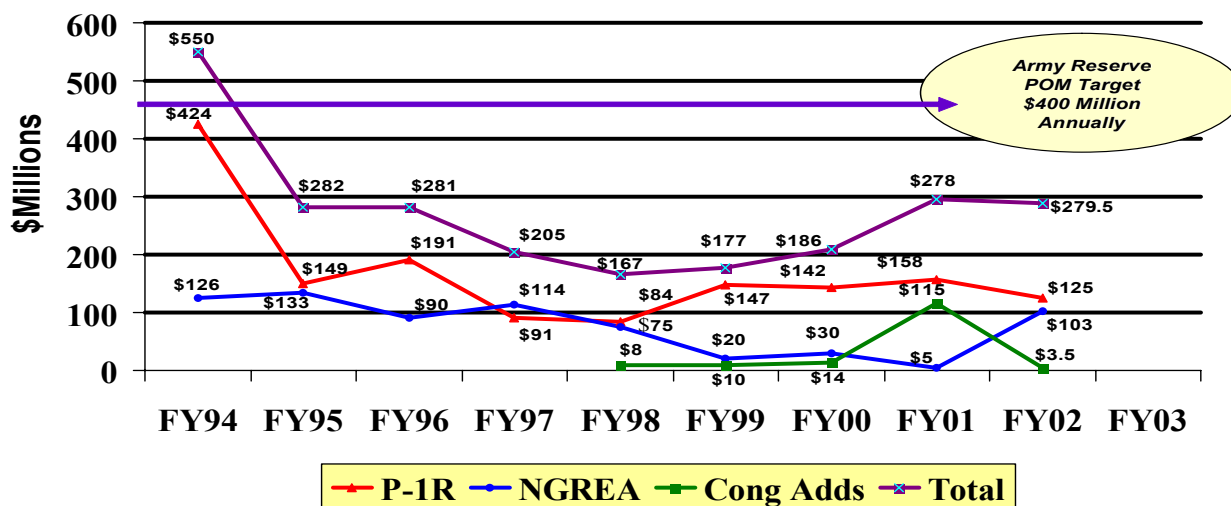
Another example is use of NGREA funding to acquire 32 RTCHs. The Army Reserve's purchase of this equipment in FY 2000 strengthened the Army's position during critical contract negotiations, reduced contract costs, saved a break in production in FY 2002, and accelerated fielding of this new CSS enabler to the Army Reserve. These systems are critical to high priority Quartermaster, Transportation and Ordnance units that support Army force projection.

From an equipment perspective, the greatest risk facing the Army Reserve in support of the National Military Strategy is the potential deferment of key CS and CSS procurement programs identified in the P-1R over the Future Years Defense Plan (FYDP). Consequently, the Army procurement plan identified for Army Reserve fielding in the P-1R must be monitored closely to ensure proper execution, since there are no formal procedures within the Department of the Army to compare equipment projections with what is actually fielded.

The chart on the next page reflects changes in the equipping sources from FY 1994 to FY 2003.



## ARMY RESERVE PROCUREMENT



### c) Future Years Program (FY 2004 – FY 2006)

(1) FY 2006 Equipment Requirements: Previously identified modernization shortfalls continue through FY 2005.

(2) Anticipated New Equipment Procurements: *Table 3* reflects the service-planned procurements from P-1R data.

(3) Anticipated Transfers from AC to RC: *Table 6* reflects data regarding transfers from the AC to the Army Reserve. A major concern by the Army Reserve is the poor condition of equipment that is cascaded. HQDA is currently addressing this issue. To offset this problem, the Army Reserve has to invest the time and resources in repairing and rebuilding cascaded equipment prior to issuing it to units.

(4) Anticipated Withdrawals from RC Inventory: *Table 5* reflects Army Reserve projected equipment transfer and withdrawal quantities.

(5) Equipment Shortages and Modernization Shortfalls at the end of FY 2006, and the effects of these shortages on overall equipment readiness: Shortages of common systems such as HMMWVs, C4I items, and FMTV are detractors to both readiness and training. Compatibility of equipment is and will continue to be a problem for communications and logistic support systems.

In order to ensure maximum compatibility of high priority units, equipping is based on a force packaging match using the “first to fight” principle. This works well for Army Reserve units planned for early deployment, but creates a problem with later deploying units which have older substitute equipment. In the current environment, Army Reserve units that deploy late for a crisis often are early deployers for peacetime missions. Therefore, in order to mobilize these

late deploying units, for other than war operations, requires last minute redistribution of equipment to bring the deploying unit to an acceptable level of readiness.

(6) Other comments: The Department of the Army defines recapitalization as the maintenance and systemic upgrade of currently fielded systems to ensure operational effectiveness and a zero time/zero mile system using research, development, test and evaluation, procurement; or operation and maintenance funds. The objectives of the Recapitalization Program include: extending maintainability, safety, and efficiency, and enhancing capability. Recapitalization may include pre-planned product improvements, ESPs and major modifications. These programs alone are not recapitalization unless they restore the system to a zero time/zero mile condition.

The Army Reserve depot maintenance program is a repair and return to unit program. However, the present Army recapitalization program under development is very different; in so much as it does not return equipment to the losing unit. Equipment is to be reissued in unit sets by DAMPL sequence to all Army units. Consequently, as the RC turns in their older equipment for recapitalization, other equipment will need to be cascaded to the RC to replace the equipment being recapitalized. Consequently, it is crucial that the RC receive equipment that is mission capable and compatible with its AC counterparts.

d) Remaining Shortfalls and Unfunded Requirements: The Army Reserve procurement report projects the Army Reserve will receive limited quantities of modern equipment during FY 2005 and FY 2006. Although the distribution is limited, certain systems are crucial to Army Reserve modernization. Projected deliveries of HEMTT chassis tactical fire trucks, FMTV and 53K Rough Terrain Container Handlers will replace aging equipment in high priority, high demand Army Reserve units. Critical logistics enablers such as electric forklifts, CSS automation systems, Palletized Load Systems, Petroleum and water distribution systems, and communications equipment remain under funded for the Army Reserve.

As the Army transforms, there will undoubtedly be changes to current FYDP projections. Future readiness is directly linked to modernization and upgrading of equipment. Increased mission requirements have forced the Army to accept risk in modernization. Because of funding constraints, procurement programs have been maintained at minimum sustaining rates, rather than at more efficient economic rates. As the FYDP is modified, it is vital that the integration of the Active and Reserve components into a “seamless” force continues with appropriate modernization to ensure interoperability and compatibility.

The cumulative depot maintenance shortfall from previous years, which stands in excess of \$20M, will exacerbate the degradation of aging equipment, severely impacting training objectives, contingency operations, and readiness.

e) Summary/Conclusion: The attacks of 11 September 2001 and the ongoing Global War on Terrorism have increased the need for strategic responsiveness across the full spectrum of operations. A focus beyond the normal major combat operations has been directed toward that of homeland security. More than 12,000 Army reservists have been mobilized in support of Operation ENDURING FREEDOM, serving both at home and abroad. Units such as the 311<sup>th</sup>

Quartermaster Company, Puerto Rico, were mobilized within hours and performed the grim task of recovering the remains of those individuals killed in the attack on the Pentagon.

As the Army transforms to a capabilities-based force to meet potential threats, CSS must also transform. The effectiveness of the Army Reserve as a combat multiplier to the Army is dependent on its ability to attain modernization goals. The logistics modernization strategy must focus on developing and procuring systems that provide the key capabilities, such as increased mobility, survivability, and agility, to the soldiers and weapons systems they will support. As the Army's premier provider of support forces, it is imperative that the Army Reserve receives adequate and consistent funding in the Army's procurement accounts to support modernization and recapitalization.

The Army Reserve cannot maintain equipment readiness and achieve the Transformation Campaign Plan modernization goals if we are forced to continually endure procurement decrements and/or delays. In past years, NGRE has played a key role in the modernization efforts of the Army Reserve. Given the steady reduction in these dollars, it is critical that additional procurement dollars be directed to support the needs of the Army Reserve. The Army Transformation Plan and the Global War on Terrorism increase the need for strategic responsiveness across the full spectrum of operations. To achieve these goals CS and CSS forces resident in the Army must be modernized and recapitalized on a synchronized and complementary timeline. Significant reductions in the logistics footprint will not be attained unless key CS and CSS enablers are procured in sufficient quantity to support the plan. We cannot maintain equipment readiness and achieve the Transformation Campaign Plan modernization goals if we are forced to endure another procurement holiday. The logistics modernization strategy must focus on developing and procuring systems that provide the key capabilities of the soldiers and weapons systems they will support with increased mobility, survivability, and agility.

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>Beginning FY 2004 COST</b>	<b>Beginning FY 2004 QTY O/H</b>	<b>Beginning FY 2005 QTY O/H</b>	<b>Beginning FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY REQ</b>
<b>AIRCRAFT</b>							
AIRPLANE CARGO-TRAN	A30062	3,068,422	10	10	10	10	30
HCPTTR ADVANCED ATTACK	H28647	10,680,000	54	54	54	54	54
HCPTTR CGO TRANS CH47D	H30517	1,820,458	64	64	64	64	64
HCPTTR BLACKHAWK UH60L	H32361	11,188,480	0	0	0	24	24
<b>CHEM/BIO EQUIPMENT</b>							
ALARM BIOL AGENT M31	A48430	785,483	35	35	35	35	105
ALARM CHEMICAL AGENT	A32355	2,357	5,070	5,070	5,070	5,070	849
COL PROT EQ NBC M20	C79000	8,350	17	17	17	17	169
DECONTAMINATING APPARA	D82404	15,192	735	735	735	735	1,105
DECONTAMINATING APPARA	F81880	21,626	82	82	82	82	3
GEN ST SMOKE GN: M157	G51840	26,622	456	456	456	456	432
GENERATR SMK ABC-M3A3	J30492	8,500	126	126	126	126	2
MASK CH BI C V M42 SM	M18526	135	2,066	2,066	2,066	2,066	1,421
MASK CHEM BIO M40 SM	M12418	95	179,753	179,753	179,753	179,753	173,485
MASK FLD ABC-M17A1 S	M11895	93	16,888	16,973	16,991	16,991	5,158
MONITOR CHEMICAL AGEN	C05701	7,500	2,926	2,934	2,936	2,936	4,508
MTG KT SM GEN M284	M17931	2,737	385	385	385	385	457
RADIAC SET AN/PDR-75	R30925	2,978	733	733	733	733	1,253
RADIAC SET AN/UDR-13	R31061	631	7,690	7,690	7,690	7,690	7,690
RADIACMETER IM-93A/UD	Q20935	73	5,697	5,697	5,697	5,697	750
<b>COMBAT COMMUNICATIONS</b>							
CENTRAL OFFICE COMMO	C41311	2,801,000	9	9	9	9	0
DATA TRANSFER DEVICE: AN/CYZ-10	D78555	1,898	5,309	5,326	5,326	15,213	5,397
COM TE CRTL AN/TSQ-84	E60197	100,000	1	1	1	1	2
HF RADIO SET: AN/GRC-1	H35404	37,000	215	224	224	224	905
MOBILE SUBS AN/VRC-97	T55957	110,000	682	686	686	686	884
RA TER AN/TRC-170(V)2	R92967	2,000,000	16	16	16	16	16
RA TER AN/TRC-170(V)3	R93035	1,000,000	16	16	16	16	16
RAD SET AN/PRC-119	R55268	6,418	4	4	4	4	10
RAD SET AN/VRC-89	R44795	14,828	5	5	5	5	0
RAD SET AN/VRC-90	R45203	8,576	80	80	80	80	9
RAD SET AN/VRC-92	R45339	15,597	2	2	2	2	0
RADIO SET: AN/GRC-106	Q32756	18,602	308	309	309	309	148
RADIO SET: AN/GRC-213	R30895	20,000	43	43	43	43	164
RADIO SET: AN/PRC-104A	R55200	12,500	57	57	57	57	474
RADIO SET: AN/VRC-90A	R67908	13,178	5,835	5,835	5,835	5,835	7,964
RADIO SET: AN/VRC-91A	R68010	23,249	1,417	1,417	1,417	1,417	1,424

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
RADIO SET: AN/VRC-92A	R45407	21,238	445	445	445	445	641
RADIO ST AN/PRC-119A	R83005	10,117	1,985	1,985	1,985	1,985	1,796
RADIO ST AN/VRC-87A	R67160	12,109	421	421	421	421	384
RADIO ST AN/VRC-88A	R67194	12,519	2,390	2,390	2,390	2,390	2,682
RADIO ST AN/VRC-89A	R44863	22,822	1,341	1,341	1,342	1,342	1,894
RADIO TELETYPEWRITER S	Q90100	52,347	4	4	4	4	2
RADIO TERMINAL SET: AN	R39588	640,000	11	11	11	11	11
RD SIG AN/APR-39A(V)1	D03159	39,984	27	27	27	27	16
REPEATER SET RADIO: AN	R39520	519,000	34	34	34	34	34
TEL DIGITAL TA-1035/U	T45408	2,459	2,670	2,670	2,670	2,670	0
CENTRAL OFFICE COMMO	Z22178	2,000,000	11	11	11	11	11
DIGITAL APPL AN/UKY-128	Z26542	35,000	2,067	2,067	2,067	2,067	2,067
LIGHTWEIGHT DIGITAL FAX AN/UXC-10	Z26923	15,000	15,000	15,000	15,000	15,000	15,000
RADIO ST REPEATER AN/TRC-174B	Z54228	331,000	33	33	33	33	33
RADIO SET TERMINAL AN/TRC-173B	Z57406	346,000	36	36	36	36	36
RADIO SET REPEATER AN/TRC-138C	Z63463	349,000	32	32	32	32	32
RADIO SET TERMINAL AN/TRC-175B	Z75641	354,000	11	11	11	11	11
<b>CONSTRUCTION EQUIPMENT</b>							
CRANE 264	F36090	8,000,104	2	2	2	2	0
CRANE WHL M320RT	F39378	236,460	15	15	15	15	46
CRANE WHL MTD	C36151	67,958	141	141	141	141	50
CRANE, WHEEL MOUNTED (ATEC)	C36586	205,270	93	93	93	130	130
CRANE WHL MTD	C39398	210,857	117	117	117	117	140
CRANE-SHOVEL CRWLR MTD	F40474	509,140	11	11	11	11	14
CRNE TRK 25T MT 250	F43429	236,460	109	109	109	109	6
CRUSHING SCREENING AND WASHING PLANT	F49673	2,000,000	5	5	5	12	12
GRADER ROAD CAT 130G	G74783	260,330	252	252	252	252	211
SECTIONALIZED GRADER	J74920	264,000	0	0	0	0	0
MIXING PLANT ASPHALT:	M57048	1,254,600	4	4	4	4	4
RLR PNEU HYSTER C530A	S11793	80,462	11	11	11	11	0
ROLLER ESSIK VR55TM	S10682	78,413	6	6	6	6	48
ROLLER VIBRATORY RS28	S12916	61,408	118	118	118	118	123
SECTIONALIZED SCAPER	S29971	303,000	18	18	18	18	18
SCRAPER EARTH MOVING S	S56246	294,008	239	239	239	239	196
TRCTR WHLD EXCAV	T34437	166,217	369	369	369	369	445
HYDRAULIC EXCAVATOR TYPES I,II,III	MULTI	298,171	80	80	80	80	80
HEAVY DRY SUPPORT BRIDGE	Z11534	5,000,000	20	20	20	20	20
MODULAR CAUSEWAY SYSTEM	Z14597	1,500,000	9	9	9	9	9
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>							
BATH UT SH-63LP	B43663	8,186	47	47	47	47	113
SYSTEM (CSSCS)	C56827	51,526	33	69	172	274	274
CONTAINER, ASSEMBLY REFRIGERATION 9K BTU	C84541	58,326	65	65	65	95	95

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
FLOODLIGHT ST TLR MTD	F79334	4,489	63	63	63	63	1,398
FOOD SANITATION CENTER	S33399	12,735	155	168	271	271	691
LAUNDRY UNIT TRAILER	L48315	42,516	249	280	280	280	306
REFRIGERATION UNIT MEC	R61428	9,156	118	118	118	118	250
LAUNDRY ADVANCED SYSTEM	Z90400	409,000	98	98	98	98	98
<b>ELECTRIC EQUIPMENT</b>							
POWER PLANT AN/MJQ-36	P28151	20,000	7	7	7	7	8
POWER PLANT ELEC DED T	P28083	11,000	12	12	12	12	18
POWER PLANT ELEC TM: 3	P27819	45,447	61	61	61	61	4
POWER PLANT: ELECTRIC	P42126	46,000	31	31	31	31	25
POWER PLANT: ELECTRIC	P42194	35,000	6	6	6	6	9
PWR DIESEL ENG	P42262	30,000	140	140	143	143	148
PWR SUPPLY PP-6224/U	P40750	1,491	1,447	1,447	1,447	1,447	2,090
EL S AN/ASM-146B L/P	H01907	87,418	88	88	88	88	117
EL SHP AN/ASM-147B	H01912	63,212	42	42	42	42	23
<b>ENGINEER, NON-CONSTRUCTION</b>							
DETECT SET MINE VP200	G02341	2,944	1,834	1,836	1,836	1,836	1,955
PLATE PRO SEC TOPO	P06082	57,423	1	1	1	1	1
JAVELIN	C60750	481,418	119	119	57	57	57
<b>GENERATORS</b>							
GEN SET DED TM: 10KW 6	G42170	13,000	103	103	103	103	253
GEN ST DSL ENG TM: 30K	J36383	20,810	124	124	124	124	11
GEN ST DSL MEP 002A	J35813	8,332	1,175	1,175	1,175	1,175	182
GEN ST DSL MEP 003A	J35825	13,635	524	524	524	524	30
GEN ST SMKE M56	G58151	243,075	0	0	0	600	600
GEN ST DSL MEP 805A	G74575	19,499	52	52	52	52	90
GEN ST DSL MEP 806A	G12034	20,903	61	61	61	61	161
GEN ST DSL MEP-802A	G11966	8,145	690	698	724	724	2,073
GEN ST DSL MEP-803A	G74711	6,979	362	385	398	398	1,158
GEN ST DSL MEP-804A	G12170	16,160	81	81	81	81	73
GEN ST MEP 009A	J40158	49,440	5	5	5	5	0
GEN ST MEP 016A	J45699	4,491	1,029	1,030	1,042	1,042	130
GEN ST MEP 108A	J40150	19,205	0	0	0	0	4
GENERATOR SET DIESEL E	G35851	21,000	39	40	41	41	98
GENERATOR SET DIESEL E	G53778	21,000	96	96	96	96	528
GENERATOR SET: DIESEL	G78306	24,000	43	43	43	43	88
<b>INFORMATION SECURITY</b>							
KEY GEN TSEC/KG-81	E03123	8,226	4	4	4	4	0
<b>MEDICAL EQUIPMENT</b>							

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
ANESTHESIA APP 4 CYL	A62773	38,520	121	121	121	121	19
MEDICAL	C18514	204,925	0	0	0	10	10
DEFIBRILLATOR CARDIOS	D86072	14,355	184	184	184	184	544
MES SICK CALL FLD (2)	M30156	8,049	34	34	34	34	73
MES TRAUMA FIELD (2)	M30499	14,553	40	40	40	40	73
MMS CENTRAL MATERIAL	M08417	276,129	48	48	48	48	104
MMS INTER CARE WARD	M08599	56,476	70	70	70	70	282
MMS LABORATORY GEN	M72482	200,320	19	19	19	19	0
MMS OPERATING ROOM	M72936	263,406	48	48	48	48	104
MMS POST-OP/ICU DEP	M09576	171,284	67	67	67	67	203
MMS X-RAY DEPMEDS:	M72300	240,205	32	32	32	32	34
MMS X-RAY MOB DEP	M86675	135,000	2	2	2	2	30
OPERATING & TRMT UNIT	P19377	15,579	9	9	9	9	316
OSCILLOSCP AN/USM-488	P30693	2,084	319	319	319	319	263
TENT 64LX20W MEDICAL	T47745	22,545	175	175	175	175	563
TENT TEMPER (SURG)	T47813	27,000	101	101	101	101	101
TRK AMB 2 LITTER M996	T38707	49,357	7	7	7	7	7
TRK AMB 4 LITTER M997	T38844	74,168	339	339	339	339	196
<b>MATERIAL HANDLING EQUIPMENT</b>							
BED CGO PLS M1077A1	B83002	16,633	2,598	2,598	2,598	2,598	1,932
SPREADER LIFT FRT CON	U12203	4,880	116	116	116	116	130
TRAILER: PALLETIZED LO	T93761	41,910	1,037	1,040	1,040	1,040	1,101
TRK LF CBD 6000 LB	T49096	11,828	14	14	14	14	0
TRK LF DD IHC M-10A	T49119	75,923	477	477	477	477	18
TRK LF DD MDL DV43	T48941	159,138	142	142	142	142	218
TRK LFT FK VAR RCH RT	T73347	100,199	513	513	513	513	827
TRUCK LIFT FORK: DED 6	T48944	72,370	381	392	392	392	192
TRUCK LIFT FORK: DSL D	T49255	47,692	688	688	688	688	649
TRUCK LIFT FORK: ELEC	X50436	28,098	21	21	21	21	30
ROUGH TERRAIN CGO HANDLER	Z40997	525,000	281	281	281	281	281
<b>OTHER PROCUREMENT</b>							
CL STEAM PRE JT TR MT	C32887	18,528	211	211	211	211	714
COMPCTR HS KORNG K300	E61618	135,186	76	76	76	76	53
DIG D GEN SG-1139/G	D37041	5,100	93	94	94	94	92
DIVING EQUIPMENT SET	D32859	7,005	3	3	3	3	0
DIVING EQUIPMENT SET	D32927	55,753	4	4	4	4	0
ELEC KEY KYK-13/TSEC	E98103	235	3,527	3,527	3,527	3,527	397
FILT SEP DL13217E9320	H52087	4,041	1,366	1,366	1,366	1,366	1,460
TACT FIRE FGHT TRK	H56391	552,238	67	67	67	67	67
WOLVERINE	H82510	6,400,000	60	60	60	60	60
HYPOCLNTN ST A506	K60988	14,342	72	72	72	72	114
INTERIOR BAY BRDG FLO	K97376	41,940	219	219	219	219	184

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
LASER INFR S AN/GVS-5	L40063	4,879	35	35	35	35	35
LDR GP BUCK CLRK 175B	L76321	235,238	45	45	45	45	50
LDR SCP 950BNS	L76556	308,110	179	179	180	180	161
LTWT DIG FAC AN/UXC-7	L67964	21,972	816	822	823	823	1,848
MELIOS LASER AN/PVS-6	M74849	8,549	31	31	31	31	87
NCD KYX-15/TSEC	N02758	2,300	1,769	1,769	1,769	1,769	89
NGT VIS AN/UAS-11(V)1	N05050	69,641	0	0	0	0	6
NI VI AN/PVS-4 W/IMG	N04732	2,839	4,659	4,826	5,024	5,024	5,086
NIGHT VIS G AN/PVS-7B	N05482	3,578	19,843	19,843	19,843	19,843	40,415
NIGHT VIS GL AN/PVS-5	N04456	4,300	2,502	2,559	2,659	2,659	193
NIGHT VISION SGT TRAC	N23721	23,099	27	27	27	27	21
GLOBAL POSITIONING SYSTEM	N95862	1,331	5,176	5,176	5,176	5,176	5,176
PRESS SEC REPRO SEMIT	P50154	450,000	0	0	0	0	2
S/E A/R FM SUPPL NO 1	T25619	55,153	42	42	42	42	42
S/EQ DAVEY COMP CMU-5	T10138	16,361	19	27	27	27	26
SP ANL AN/USM-489(V)1	S01416	14,930	14	21	21	21	39
SHELTER TACT EXPAND	S01359	99,000	135	135	135	135	135
SPCH SEC EQ TSEC/KY57	S01373	1,929	1,594	1,594	1,594	1,594	193
SSE: 28VRED TSEC/KY58	S01441	3,062	209	209	209	209	34
TOW-NI S EQ AN/UAS-12	N04982	61,791	40	42	42	42	42
WELDING SHOP TRLR MTD	Y48255	75,000	229	229	229	229	229
M58 MECH TURB SMKE SYS	G87229	410,000	42	42	42	17	14
MODERN BURNER UNIT	Z21129	2,700	5,115	5,115	5,115	5,115	5,115
INTEG SYST CONT	Z35620	1,141,010	4	4	4	4	4
<b>PETROLEUM EQUIPMENT</b>							
DRUM FABRIC 500 GAL	D69050	2,088	471	471	471	471	630
FUEL SYS SUP PT	J04717	22,435	165	165	165	165	388
FWD AREA RFL EQUIP	H94824	9,093	131	131	131	131	162
LAB PETRO SEMI TRL MT	L33800	650,000	13	15	17	17	17
PROCESS MACH 7GL TANK	P98514	14,722	35	35	35	35	64
PRT PLT SW TRNSPTBL	P61665	283,221	11	11	11	11	13
PUMP ASSY W/REGULATOR	P97119	26,244	70	70	70	70	190
PUMP CTRF GD FM 125GM	P92030	2,267	707	707	707	707	1,337
PUMPING ASSY 600 GPM	P97369	27,426	168	168	168	168	210
TANK ASSY 20000 PETRO	T12620	6,065	339	339	339	339	656
TANK ASY PTR 10000GAL	V12552	6,990	809	809	809	809	1,672
TERMINAL TACT PETRO	T56041	1,400,873	0	0	0	0	14
TEST KIT PETROLEUM AV	T05741	4,565	128	128	128	128	242
VIEWER INFRARED: AN/PA	Y03104	16,779	18	18	18	18	40
<b>REPAIR EQUIPMENT</b>							
ELECTRONIC SHOP SEMITR	H01855	169,817	66	66	66	66	66
INST REP SHP M185A3	K90188	94,021	15	15	15	15	0



**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
S/E AUTO REP FM BASIC	T24660	113,722	43	43	43	43	47
SHOP EQUIPMENT AUTO MA	T25756	124,948	10	10	10	10	21
TOOL OUTFIT HYDRAULIC	T30377	83,000	57	57	57	57	97
WELDING SHOP TRAILER M	W48391	75,000	201	201	201	201	229
WELDING SHOP TRAILER M	Y48323	9,603	13	13	13	13	5
<b>RAIL &amp; FLOAT EQUIPMENT</b>							
LANDING CRAFT MECHANIZ	L36739	162,612	27	27	27	27	2
LANDING CRAFT UTILITY:	L36876	1,530,000	5	5	5	5	1
LANDING CRAFT UTILITY:	L36989	5,000,000	15	15	15	15	20
LIGHTER AMPH LARC-LX	L67508	390,000	4	4	4	4	0
RAMP BAY BRIDGE FLOAT	R10527	47,040	75	75	75	75	75
RAMP LOADING VEHICLE	R11154	7,229	316	316	316	316	229
TRANSPORTER BRDGE FLO	X23277	102,218	57	57	57	57	11
TUG: LARGE COASTAL AND	T68330	1,250,000	4	4	4	4	0
VESSEL LOGISTIC SUPPOR	V00426	9,999,000	2	2	2	2	2
<b>TACTICAL VEHICLES</b>							
REC VEH FT MED M88A1	R50681	1,210,755	40	40	40	40	30
SEMITRAILER VAN: REPAI	S74832	32,952	87	87	87	87	135
STLR FB 34T M872	S70159	20,004	3,042	3,042	3,057	3,057	3,080
STLR FUEL M131A5C	S72983	15,064	4	4	4	4	24
STLR LB 22-1/2T M871	S70027	24,483	1,225	1,225	1,225	1,225	1,625
STLR TANK FUEL M967	S10059	77,550	966	966	966	966	1,080
STLR TNK 7500 G M1062	S73119	30,165	545	545	545	545	900
STLR TNK FUEL M969	S73372	97,413	568	581	603	603	623
STLR VAN CGO M128A1C	S74079	7,111	25	25	25	25	3
STLR VAN ELCT M373A2	S74353	24,125	20	20	20	20	2
STLR VAN SUP M129A1C	S75175	84,466	430	430	430	430	375
TK TR CBT W/O W M1977	T91308	130,000	325	325	325	325	336
TLR BOL G/P 4T M796	W94536	9,618	501	501	501	501	480
TLR CGO 3/4TON M101	W95537	3,894	2,198	2,198	2,198	2,198	644
TRAILER FB M989	T45465	34,714	65	65	65	65	76
TRCTR FT CAT D7F DV29	W76816	241,642	319	321	327	327	353
TRCTR FT CAT D7F DV29	W83529	245,275	312	312	312	312	300
TRCTR FT CAT D8K-8S-8	W88699	385,805	36	36	36	36	0
TRK CGO 2 1/2T M1081	T41995	101,742	2	2	2	2	2
TRK CGO 4X4 M1078	T60081	104,626	482	503	511	511	1,795
TRK CGO 4X4 W/W M1078	T60149	115,639	101	101	101	101	499
TRK CGO MTV LWB M1085	T61704	118,791	3	3	3	3	8
TRK CGO PLS M1074	T41067	288,015	124	124	124	124	0
TRK CGO PLS M1075	T40999	243,746	783	783	783	783	840
TRK CGO TACT	T39586	194,853	62	62	62	62	83
TRK CGO TACT	T59278	185,820	96	96	96	96	48

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
TRK CGO TACT W/W	T39518	193,789	41	41	41	41	5
TRK DMP MTV W/E M1090	T64911	141,557	62	62	62	62	395
TRK FS 21/2T M49A2C	X57271	98,162	5	5	5	5	1
TRK TCTR HET M911	T61035	75,416	6	6	6	6	2
TRK TK FS M978	T87243	237,210	160	160	162	162	309
TRK TK FS M978 W/W	T58161	246,567	131	131	131	131	33
TRK TRAC M878	T60353	51,500	71	71	71	71	134
TRK TRAC M915	T61103	78,589	2,305	2,305	2,305	2,305	2,458
TRK TRAC M916	T91656	164,760	701	701	701	701	591
TRK TRAC M920	T61171	74,288	313	313	313	313	160
TRK TRACTOR HET M1070	T59048	256,704	452	452	452	452	458
TRK TRCTR MTV M1088	T61239	142,132	126	126	126	126	2,009
TRK UTIL 10000 M1097	T07679	58,374	340	406	406	406	864
TRK UTIL 1-1/4T M1025	T92242	64,281	1,713	1,713	1,713	1,713	303
TRK UTIL 1-1/4T M1038	T61562	36,672	349	382	384	384	470
TRK UTIL 1-1/4T M998	T61494	36,076	8,785	8,795	8,805	8,805	13,557
TRK UTIL SHEL T M1037	T07543	36,932	686	686	686	686	454
TRK VAN W/E M1079	T93484	162,060	14	14	14	14	138
TRK WKR MTV W/W M1089	T94709	268,992	22	22	22	22	176
TRK WRK M984 W/W	T63093	276,866	390	390	390	390	395
TRUCK CARGO: MTV W/E	T61908	128,076	159	169	169	169	1,303
<b>TACTICAL COMBAT VEHICLES</b>							
BRDG ERCT SE BAILEY	C22058	43,944	5	5	5	5	0
BRDG ERCT SE FB UK	C22126	488,354	6	6	6	6	12
BRDG FIX BAILEY	C23017	303,673	6	6	6	6	0
BRDG FIX HW AL 100 FT	C22811	964,515	9	9	9	9	24
<b>TEST EQUIPMENT</b>							
TEST SET AN/GRM-114	T87468	11,822	175	176	176	176	160
TEST SET ELECTR SYSTS	T52849	561,312	10	10	10	10	0
TST F OQ-290(V)1/MSM	T61973						
<b>WEAPONS</b>							
MACH GUN 5.56MM M249	M09009	2,653	11,893	11,897	11,897	11,897	10,041
MG GRENAD MK19 MODIII	M92362	15,320	1,762	1,762	1,762	1,762	2,366
M240B MACHINE GUN	M92841	6,000	133	133	133	133	133
RIFLE 5.56MM M16A2	R95035	449	108,747	109,475	109,512	109,512	131,849
RIFLE M16A4	R97175	587	1,488	1,488	1,488	1,488	1,488
M4 CARBINE	R97234	587	5,719	5,719	5,719	5,719	5,719
<b>WATER EQUIPMENT</b>							
DIST WTR TNK WD6S	D28318	275,000	86	86	86	86	99
FORWARD AREA WATER POI	F42612	19,484	90	90	90	90	105
TACTICAL WATER DISTRIB	T09094	660,000	32	32	32	32	35

**Army Reserve**  
**Consolidated Major Item Inventory and Requirements**

Table 1

<i><b>NOMENCLATURE</b></i>	<i><b>EQUIP No.</b></i>	<i><b>Beginning FY 2004 COST</b></i>	<i><b>Beginning FY 2004 QTY O/H</b></i>	<i><b>Beginning FY 2005 QTY O/H</b></i>	<i><b>Beginning FY 2006 QTY O/H</b></i>	<i><b>Ending FY 2006 QTY O/H</b></i>	<i><b>Ending FY 2006 QTY REQ</b></i>
TANK ASY WTR 3000 GAL	T19033	2,377	1,924	1,924	1,924	1,924	2,101
TANK FAB WTR 3000 GAL	V15018	1,762	55	55	55	55	342
TANK LIQ DISP TRLR MT	V19950	1,825	515	515	526	526	840
WATER STORAGE/DISTRIBU	W37311	200,508	13	13	13	13	22
WTR PURIF 3000GPH TM	W47225	700,000	130	130	130	130	147

**Army Reserve**  
**Average Age of Equipment**

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for fiscal year (FY) 2004.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>AVERAGE AGE</b>	<b>REMARKS</b>
<b>AIRCRAFT</b>			
HELICOPTER, BLACKHAWK UH60-L	H32361	1	
HELICOPTER,ADVANCED ATTACK AH-64A	H28647	12	
HELICOPTER,CARGO TRANSPORT CH47-D	H30517	14	
<b>CHEMICAL DEFENSIVE EQUIPMENT</b>			
GENERATOR, SMOKE, MECH PULSE	J30492	29	
<b>CONSTRUCTION EQUIPMENT</b>			
CRANE TRK MOUNTED: HYD 25T CAT (CCE)	F43429	27	
CRANE, WHEEL MOUNTED, 7 1/2 T	C36151	13	
CRANE, WHEEL MOUNTED, HYDRAULIC 25T (ATEC)	C36586	4	
CRANE, WHEEL MOUNTED, ROUGH TERRAIN	C39398	12	
CRANE-SHOVEL, CRAWLER MOUNTED	F40474	0	
LOADER, SCOOP, 2.5CY	L76556	17	
LOADER, SCOOP,5CY	L76321	24	
MIXING PLANT ASPHALT	M57048	7	
RAMP LOADING VEHICLE, 16K LB	R11154	13	
ROLLER PNEUMATIC, VAR PRESSURE	S11793	24	
ROLLER, TOWED, VIBRATING, 5T	S10682	17	
ROLLER, VIBRATORY, SP, HIGH IMPACT	S12916	24	
SCRAPER, EARTH MOVING	S56246	17	
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>			
FLOODLIGHT SET TRAILER MOUNTED	F79334	18	
LAUNDRY UNIT, TRAILER MOUNTED	L48315	34	
<b>GENERATORS</b>			
GENERATOR PWR, 15KW,60HZ,TRLR MTD	G53778	8	
GENERATOR SET,DIESEL ENGINE,30KW	J36383	19	
<b>MATERIEL HANDLING EQUIPMENT</b>			
ROUGH TERRAIN CARGO HANDLER (RTCH) 50K LB	T48941	17	
<b>REPAIR EQUIPMENT</b>			
INST REP SHOP M185A3	K90188	31	
<b>TACTICAL VEHICLES</b>			
TRK BOLSTER 5T 6X6 WVN	X39187	32	
TRK CGO 1 1/4T M1008 CUCV	T59482	17	
TRK CGO 1 1/4T M1028 CUCV	T59414	17	
TRK CGO 2 1/2T 6X6 W/E	X40009	8	
TRK CGO 2 1/2T 6X6 WVN	X40146	7	

**Army Reserve  
Average Age of Equipment**

Table 2

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>AVERAGE AGE</i>	<i>REMARKS</i>
TRK CGO 2-1/2T M35A2C	X40077	7	
TRK CGO 2-1/2T M36A2	X40283	6	
TRK CGO 5T 6X6 LWB W/E	X40831	33	
TRK CGO 5T 6X6 LWB WVN	X40968	34	
TRK CGO 5T 6X6 XLWB WE	X41105	16	
TRK CGO 5T 6X6 XLWB WN	X41242	33	
TRK CGO DROP SIDE 5T	X40794	14	
TRK CGO DROP SIDE WVN	X40931	16	
TRK CGO M35A2C WW	X40214	7	
TRK CGO M36A2 WW	X40420	7	
TRK CGO TACT 1 1/4T CUCV	T59346	18	
TRK CGO TACT W/LT CRANE HEMTT M977	T59278	15	
TRK DUMP 20T DD 12 CY	X44403	25	
TRK DUMP 5T 6X6 W/E	X43708	19	
TRK DUMP 5T 6X6 WVN WE	X43845	29	
TRK TANK FUEL 2500G	T87243	13	
TRK TANK FUEL 2500G WW	T58161	12	
TRK TANK FUEL M49A2C	X57271	30	
TRK TCTR HET M911	T61035	24	
TRK TRAC 5T 6X6 W/E	X59326	22	
TRK TRAC 5T 6X6 WVN WE	X59463	24	
TRK TRAC 5T YARD 4X2	T60353	22	
TRK TRAC 66000 M916	T91656	11	
TRK TRAC 6X4 M915	T61103	21	
TRK TRAC MET 8X6 75000	T61171	23	
TRK TRAC WKR 5T WVN WE	X60696	32	
TRK UTIL 1 1/4 4X4 WE M998 CGO/TROOP CARRIER	T61494	12	
TRK UTIL 1 1/4 4X4 WW M1038 CGO/TRP CARRIER	T61562	14	
TRK UTIL 1 1/4T M1025 HMMWV ARMAMENT CARR	T92242	13	
TRK UTIL 1 1/4T M1026 HMMWV ARMNT CARR W/W	T92310	13	
TRK UTIL 1/4T 4X4 W/E	X60833	29	
TRK VAN EXP 5T 6X6	X62237	17	
TRK VAN SHOP 2 1/2T WE	X62340	34	
TRK VAN SHOP M109A3 WW	X62477	18	
TRK WATER 1000G M50A3	X58367	32	
TRK WKR TACT 8X8 HVY EXP MOB TACT TRUCK	T63093	11	
TRK WRECKER 5T	X63299	24	
TRLR PALLET LOAD 8X20	T93761	7	
TRUCK TRACTOR (HET)	T59048	9	
TRUCK TRACTOR 2-1/2 T	X59052	35	
TRUCK VAN LMTV W/E	T93484	2	
TRUCK WRECKER MTV W/E	T94709	2	
TRUCK, FORK LIFT, 6K LB	T49096	14	
TRUCK, FORK LIFT, 6K LB,RT,VAR REACH	T48944	11	
TRUCK, FORK LIFT,DSL DRVN,10K LB,48 IN	T49119	20	

**Army Reserve  
Average Age of Equipment**

Table 2

<i><b>NOMENCLATURE</b></i>	<i><b>EQUIP No.</b></i>	<i><b>AVERAGE AGE</b></i>	<i><b>REMARKS</b></i>
TRUCK, FORK LIFT,DSL DRVN,4K LB,RT	T49225	19	
SEMITRAILER TANK PETRO	S73119	12	
SEMITRAILER, 22 1/2T M871	S70027	9	
SEMITRAILER, FUEL SVC, 5K GAL	S72983	35	
SEMITRAILER, VAN SUP M129A2C	S75175	13	
SEMITRAILER, VAN, CGO M128A2C	S74079	34	
SEMITRAILER, VAN, RPR STOR,6T	S74832	30	
STLR LB HVY EQUIP 60T	S70661	26	
TRAILER, FLATBED,11T,4 WH (HEMAT)	T45465	9	
TRK AMB 2 LITTER ARMD	T38707	17	
TRK AMB 4 LITTER ARMD	T38844	14	
TRK CGO HVY W/MHE W/E	T41067	9	
TRK CGO HVY XPORTER	T40999	8	
TRK CGO TACT W/MED CRN	T39586	14	
TRK CGO TACT W/W-LT CR	T39518	15	
TRK UTIL SHLTR CARR WE	T07543	12	
TRK UTIL TACT 3/4T W/E	T05028	17	
TRK UTIL TOW CARR ARMD	T05096	16	
TRUCK UTILITY HMMWV	T07679	7	
<b>TRACKED COMBAT VEHICLES</b>			
RECOVERY VEHICLE, MDM M88A1	R50681	27	
SEMITRAILER, TANK, 5K GAL M967	S10059	16	
<b>WATER EQUIPMENT</b>			
DISTRIBUTOR, WATER TANK, 6000 GAL, TRLR MTD	D28318	17	

**Army Reserve**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included. Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>MODIFICATION OF AIRCRAFT</b>				
CH-47 CARGO HELICOPTER MODS	0	41,000,000	98,600,000	
GATM ROLLUP	0	18,300,000	0	
AIRBORNE DIGITIZATION	0	1,043,000	1,719,000	
<b>SPARES AND REPAIR PARTS</b>				
SPARE PARTS (AIR)	0	0	4,196,000	
<b>WEAPONS AND OTHER COMBAT VEHICLES</b>				
XM107, CAL. 50, SNIPER RIFLE	0	44,000	0	
5.56 CARBINE M4	0	2,778,000	2,960,000	
<b>TACTICAL VEHICLES</b>				
SEMITRAILERS, TANKERS	1,880,000	1,812,000	7,820,000	
HI MOB MULTI-PURP WHLD VEH (HMMWV)	12,956,000	10,439,000	25,478,000	
FAMILY OF MEDIUM TACTICAL VEH (FMTV)	116,671,000	197,043,000	153,320,000	
FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIPM	13,771,000	4,009,000	2,293,000	
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)	5,013,000	0	8,085,000	
TRUCK, TRACTOR, LINE HAUL, M915/M916	0	14,787,000	15,110,000	
HVY EXPANDED MOBILE TACTICAL TRUCK EXT SER	0	10,094,000	17,122,000	
<b>COMM - COMBAT COMMUNICATIONS</b>				
ACUS MOD PROGRAM	835,000	1,554,000	27,774,000	
COMMS-ELEC EQUIP FIELDING	40,000	45,000	35,000	
MEDICAL COMM FOR CBT CASUALTY CARE (MC4)	2,638,000	4,697,000	1,258,000	
<b>INFORMATION SECURITY</b>				
TSEC - ARMY KEY MGT SYS (AKMS)	64,000	90,000	105,000	
<b>ELECT EQUIP - TACT INT REL ACT (TIARA)</b>				
TUAV	0	4,000	0	
<b>ELECT EQUIP - TACTICAL C2 SYSTEMS</b>				
ISYSCON EQUIPMENT	3,900,000	3,190,000	389,000	
JOINT NETWORK MANAGEMENT SYSTEM (JNMS)	1,525,000	1,060,000	442,000	
<b>BRIDGING EQUIPMENT</b>				
TACTICAL BRIDGING	28,047,000	19,050,000	10,674,000	
TACTICAL BRIDGE, FLOAT-RIBBON	16,571,000	2,380,000	16,282,000	
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>				
HEATERS AND ECU'S	589,000	1,704,000	1,714,000	
LAUNDRIES, SHOWERS AND LATRINES	863,000	1,341,000	0	
LIGHTWEIGHT MAINTENANCE ENCLOSURE (LME)	2,068,000	1,322,000	1,309,000	
FIELD FEEDING EQUIPMENT	735,000	811,000	4,571,000	
<b>PETROLEUM EQUIPMENT</b>				
DISTRIBUTION SYSTEMS, PETROLEUM & WATER	252,000	520,000	614,000	
<b>WATER EQUIPMENT</b>				
WATER PURIFICATION SYSTEMS	1,591,000	327,000	0	
<b>MEDICAL EQUIPMENT</b>				
COMBAT SUPPORT MEDICAL	780,000	509,000	73,000	
<b>MAINTENANCE EQUIPMENT</b>				
SHOP EQ CONTACT MAINTENANCE TRK MTD (MYP)	0	1,779,000	1,388,000	
WELDING SHOP, TRAILER MTD	885,000	422,000	0	
<b>CONSTRUCTION EQUIPMENT</b>				
LOADERS	2,706,000	528,000	0	

**Army Reserve**  
**Service Planned Procurements (P-1R Data)**

Table 3

<i><b>NOMENCLATURE</b></i>	<i><b>FY 2004</b></i>	<i><b>FY 2005</b></i>	<i><b>FY 2006</b></i>	<i><b>REMARKS</b></i>
CRUSHING/SCREENING PLANT, 150 TPH	0	2,050,000	0	
<b>GENERATORS</b>				
GENERATORS AND ASSOCIATED EQUIP	8,723,000	8,861,000	9,432,000	
<b>MATERIAL HANDLING EQUIPMENT</b>				
ROUGH TERRAIN CONTAINER HANDLER (RTCH)	16,933,000	34,489,000	14,300,000	
ALL TERRAIN LIFTING ARMY SYSTEM	4,290,000	7,965,000	7,000,000	
<b>TEST MEASURE AND DIG EQUIPMENT (TMD)</b>				
INTEGRATED FAMILY OF TEST EQUIPMENT (IFTE)	0	0	1,815,000	
<b>TOTAL:</b>	<b>244,326,000</b>	<b>396,047,000</b>	<b>435,878,000</b>	



### National Guard and Reserve Equipment Appropriation (NGREA) Procurements

Table 4

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory.

*Note: Cost figures are in dollars.*

[illegible]

## Projected Equipment Transfer/Withdrawal Quantities

*NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>FY 2004 QTY</b>	<b>FY 2005 QTY</b>	<b>FY 2006 QTY</b>	<b>REMARKS</b>
<b>CHEM BIO EQUIPMENT</b>					
DECONTAMINATING APPARATUS	D82404		1		
MONITOR CHEMICAL AGENT	C05701	48			
<b>COMBAT COMMUNICATIONS</b>					
HF RADIO SET: AN/GRC-1	H35404	4	1		
LTWT DIG FAC AN/UXC-7	L67964			2	
MOBILE SUBS AN/VRC-97	T55957			5	
RADIAC SET AN/PDR-75	R30925		4	14	
RADIO SET: AN/GRC-213	R30895		1		
<b>CONSTRUCTION EQUIPMENT</b>					
TRCTR WHLD EXCAV	T34437	4	12	7	
<b>GENERATORS</b>					
GEN ST DSL MEP-802A	G11966		5	12	
GEN ST DSL MEP-803A	G74711			2	
GENERATOR SET DIESEL E	G35851			3	
POWER PLANT: ELECTRIC	P42194	1			
<b>MEDICAL EQUIPMENT</b>					
ANESTHESIA APP 4 CYL	A62773			5	
DEFIBRILLATOR CARDIOS	D86072	3	6	6	
MMS CENTRAL MATERIAL	M08417		1	1	
MMS INTER CARE WARD	M08599		2	5	
MMS OPERATING ROOM	M72936		1	1	
MMS POST-OP/ICU DEP	M09576		1	4	
MMS X-RAY MOB DEP	M86675			1	
<b>OTHER PROCUREMENT</b>					
CENTRAL OFFICE COMMS	C41311		2		
DIG D GEN SG-1139/G	D37041	2	1		
MELIOS LASER AN/PVS-6	M74849	485	59		
<b>PETROLEUM EQUIPMENT</b>					
FILT SEP DL13217E9320	H52087		6		
PROCESS MACH 7GL TANK	P98514			2	

USAR

Table 5

Projected Equipment Transfer/Withdrawal Quantities

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>FY 2004 QTY</i>	<i>FY 2005 QTY</i>	<i>FY 2006 QTY</i>	<i>REMARKS</i>
TANK ASY PTR 10000GAL	V12552		5		
TEST KIT PETROLEUM AV	T05741	17	8		
<b>REPAIR EQUIPMENT</b>					
WELDING SHOP TRAILER M	W48391	6	6		
<b>TACTICAL VEHICLES</b>					
STLR FB 34T M872	S70159	20			
STLR TNK 7500 G M1062	S73119	55			
STLR TNK FUEL M969	S73372	1			
TLR BOL G/P 4T M796	W94536	1	50		
TRK CGO 5T M-923	X40794	55			
TRK CGO 5T M-931	X59326	60			
TRK LFT FK VAR RCH RT	T73347		11		
TRK UTIL 1-1/4T M1038	T61562		9	6	
TRK UTIL 1-1/4T M998	T61494		37	10	
TRK WRK M984 W/W	T63093			7	
<b>WATER EQUIPMENT</b>					
FORWARD AREA WATER POINT	F42612		4		
MG GRENAD MK19 MODIII	M92362	98	1		

## FY 2000 Planned vs Actual Procurements and Transfers

NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002. Cost figures are in dollars.

<i>Nomenclature</i>	<i>Equip No.</i>	<i>FY 00 Transfers</i>		<i>FY 00 Procurements</i>		<i>FY 00 NGREA</i>	
		<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>
<b>AIRCRAFT</b>							
Utility/Cargo Airplane Mods	MULTI-LIN			1,641,000	3,600,000		
<b>CONSTRUCTION EQUIPMENT</b>							
Crane Shovel Crawler Mtd, 20-40 Ton w/attach	F40474			3,092,000			
Cranes	T73347				471,000		
Crushing/Screening Plant, 150 Tph	F49673			1,840,000	1,832,000		
Deployable Universal Combat Earth Movers	T76541			10,842,000	10,842,000		
Hydraulic Excavator	MULTI			3,174,000	8,815,000		
<b>COMBAT SERVICE SUPPORT EQUIPMENT</b>							
Floodlight Set, Elec, Trl Mtd, 3 Lights	F79334			514,000			
Modern Burner Unit (MBU) w/2KW Generator	Z21129					975,000	975,000
<b>ELECTRONICS, TACTICAL</b>							
Reserve Component Automation Sys (RCAS)	NO LIN			31,380,000	31,200,000		
Automated Data Processing Equip	NO LIN			2,726,000	2,680,000		
<b>ELECTRONICS, TACTICAL</b>							
LOGTECH	NO LIN			812,000	812,000		
Maneuver Control System (MCS)					312,000		
STAMIS Tactical Computers (STACOMP)	NO LIN			6,955,000	6,955,000		
<b>MEDICAL EQUIPMENT</b>							
Combat Support Medical	MULTI			7,960,000	2,010,000		
<b>MATERIAL HANDLING EQUIPMENT</b>							
Forklift, 10,000 Lbs	T49119		2,100,000				
Palletized Load System (PLS) Trailer M1076	T93761					450,000	450,000
Rough Container Handler 53K	R16611					16,800,000	14,880,000
Rough Terrain Container Crane	R39398			10,930,000	1,075,000		
Trailer, Breakbult 22.5T M871A3	S70027						2,170,000
<b>PETROLEUM EQUIPMENT</b>							
Distribution Systems, Petroleum & Water	MULTI				1,000,000		
Family Of Tank Assemblies, Fabric, Collapsible	NO LIN				3,000,000		
Items Less Than \$5.0m (POL)	MULTI			6,332,000			
Quality Surveillance Equipment	MULTI				41,000		
<b>RAIL &amp; FLOAT EQUIPMENT</b>							
Logistic Support Vessel (LSV)	V00426			18,924,000	18,844,000		
Common Bridge Transporter and Equipment (CBT)	T91308					2,800,000	2,800,000
<b>TACTICAL VEHICLES</b>							
Family Of Heavy Tactical Vehicles (FHTV)	MULTI-LIN			12,503,000	4,000,000		
Family Of Medium Tactical Veh (FMTV)	MULTI-LIN				32,173,000	2,700,000	2,210,000

**USAR**  
**FY 2000 Planned vs Actual Procurements and Transfers**

Table 6

<i>Nomenclature</i>	<i>Equip No.</i>	<i>FY 00 Transfers</i>		<i>FY 00 Procurements</i>		<i>FY 00 NGREA</i>	
		<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>
<b>AIRCRAFT</b>							
Hi Mob Multi-purp Whld Veh (HMMWV)	T61494		9,555,000	5,287,000		6,120,000	6,360,000
Semitrailers, Tankers	S73372		100,000		987,000		
Truck, Tractor, Line Haul, M915/M916	T61103			41,241,000	36,630,000		
Truck, Wrecker, 5-Ton	X63299		1,190,000				
Truck, Tractor, 5-Ton	X59326		30,100,000				
<b>TRACKED COMBAT VEHICLES</b>							
Armored Veh Launch Bridge (AVLB) (MOD)	C20414			1,311,000			
<b>TEST EQUIPMENT</b>							
Test Equipment Modernization (TEMOD)	MULTI			1,165,000	1,165,000		
<b>WEAPONS</b>							
Grenade Launcher, Auto, 40mm, MK19-3	M92362			6,187,000	4,481,000		
M16 Rifle	R97234			1,149,000	1,143,000		
Totals:			43,045,000	154,862,000	148,508,000	28,870,000	28,870,000

**Army Reserve**  
**Major Item of Equipment Substitution List**

Table 7

*NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

<b>REQUIRED ITEM NOMENCLATURE</b>	<b>REQUIRED ITEM EQUIPMENT #</b>	<b>SUBSTITUTE ITEM NOMENCLATURE</b>	<b>SUBSTITUTE ITEM EQUIP #</b>	<b>FY 2004 QTY</b>	<b>DEPLOYABLE YES NO</b>	
<b>AIRCRAFT</b>						
AIRPLANE CARGO-TRAN	A30062	APL CGO TRS C-12D	A29812	16	X	
AIRPLANE CARGO-TRAN	A30062	LOCAL-ASSIGNED LIN	LOCALA	10	X	
CARR SMOKE GEN M1059	C12815	MECH SMOKE OBSCUR M58	G87229	21	X	
<b>CHEM/BIO EQUIPMENT</b>						
GENSMOKE MECH M56	G58151	GEN ST SMOKE GN: M157	G51840	24	X	
MA CHE BIO M43A1 LG N	M18594	MASK PROT ACFT M24 M	M11621	6	X	
MASK CB M45 XSMALL	M12736	MASK PROT ACFT M24 M	M11621	291	X	
MASK CBAA M48 SMALL	M13515	MASK PROT ACFT M24 M	MULTI-LIN	89	X	
MASK CH BI C V M42 SM	M18526	MASK: PROTECTIVE TANK	MULTI-LIN	143	X	
MASK CHEM BIO M40 SM	M12418	MASK FLD ABC-M17A1 S	M11895	3031	X	
MASK CHEM BIO M40 SM	M12418	MASK CH BI C V M42 SM	M18526	6	X	
MASK CHEM BIO M43 SM	M12350	MASK PROT ACFT M24 M	M11621	3	X	
MOUNTING KIT F/M548A1	M18293	MTG KT MI DIS GR M139	M17999	6	X	
MTG KT SM GEN M284	M17931	MTG KT SM GEN M288	M78620	72	X	
<b>COMBAT COMMUNICATIONS</b>						
CTR REC C-11561(C)/U	C05541	RADIO SET: AN/VRC-47	Q54174	874	X	
D T D ANCYZ-10 V2	D78555	CHGR RADET PP-1578/PD	MULT-LIN	1662	X	
DIG NS TRM TA-1042A/U	D60801	DNVT TA-954/TT	D40533	101	X	
HF RADIO SET: AN/GRC-1	H35404	LOCAL-ASSIGNED LIN	MULTI-LIN	171	X	
OPS CENTER COMM	N20115	OPER CEN AN/MS-32 LP	N20663	4	X	
RADIO SET AN/PRC-119D	R83073		R83141	32	X	
RADIO SET AN/VRC-88D	R67262	RADIO ST AN/VRC-88A	R67194	9	X	
RADIO SET AN/VRC-89D	R44931	RADIO ST AN/VRC-89A	MULTI-LIN	210	X	
RADIO SET AN/VRC-90D	R67976	RADIO ST AN/VRC-89A	MULTI-LIN	132	X	
RADIO SET AN/VRC-91D	R68078	RADIO SET: AN/VRC-91A	R44999	321	X	
RADIO SET AN/VRC-92D	R45475	RADIO SET: AN/VRC-92A	MULTI-LIN	52	X	
RADIO SET: AN/GRC-213	R30895	LOCAL-ASSIGNED LIN	LOCALA	54	X	
RADIO SET: AN/VRC-90A	R67908	RADIO SET: AN/GRC-106	MULTI-LIN	958	X	
RADIO SET: AN/VRC-91A	R68010	RADIO SET AN/GRC & VRC	MULTI-LIN	103	X	
RADIO SET: AN/VRC-92A	R45407	RADIO SET: AN/VRC-46	MULTI-LIN	68	X	
RADIO ST AN/PRC-119A	R83005	RADIO SET AN/PRC-25	Q38299	78	X	
RADIO ST AN/PRC-126	R55336	LOCAL-ASSIGNED LIN	MULTI-LIN	110	X	
RADIO ST AN/VRC-87A	R67160	RADIO SET: AN/VRC-46	MULTI-LIN	59	X	
RADIO ST AN/VRC-88A	R67194	RADIO SET AN/GRC-125	MULTI-LIN	190	X	
RADIO ST AN/VRC-89A	R44863	RADIO SET: AN/VRC-12	MULTI-LIN	142	X	
RDO TS ST AN/GRM-114B	R36178	GEN SIG AN/URM-103	MULTI-LIN	23	X	
RT-1476A/ARC-201AV	R40255	LOCAL-ASSIGNED LIN	LOCALA	17	X	

**Army Reserve**  
**Major Item of Equipment Substitution List**

Table 7

<i>REQUIRED ITEM NOMENCLATURE</i>	<i>REQUIRED ITEM EQUIPMENT #</i>	<i>SUBSTITUTE ITEM NOMENCLATURE</i>	<i>SUBSTITUTE ITEM EQUIP #</i>	<i>FY 2004 QTY</i>	<i>DEPLOYABLE YES NO</i>	
TAPE READ KOI-18/TSEC	T40405	D T D ANCYZ-10 V2	D78555	4	X	
<b>CONSTRUCTION EQUIPMENT</b>						
CRANE WHL M320RT	F39378	CRANE WHL MTD	MULT-LIN	19	X	
CRANE WHL MTD	C39398	CRNE TRK 25T MT 250	F43429	7	X	
CRANE: WHEEL MTD H	C36586	CRANE WHL MTD	C36151	10	X	
<b>COMBAT SERVICE SUPPORT</b>						
BATH UT SH-63LP	B43663	LOCAL-ASSIGNED LIN	LOCALA	70	X	
FLOODLIGHT ST TLR MTD	F79334	FLOODLIGHT 6 LIGHTS	H79221	19	X	
PARACHUTE CARGO: 64FT	P66486	PARACHUTE CARGO: 64 FT	N66418	36	X	
<b>GENERATORS</b>						
DIST SYS ELEC 40 AMP	F55485	FEEDER SYS ELECT	MULTI-LIN	57	X	
FLUXMTR TS-15C/AP	M37855	LOCAL-ASSIGNED LIN	LOCALA	2	X	
GEN SET DED MEP 831	G18358	GEN ST DSL MEP-802A	MULTI-LIN	509	X	
GEN SET DED TM: 5KW 60	G42238	GEN ST DSL ENG TM: 5KW	G37273	28	X	
GEN ST DSL MEP-016B	G54041	GEN ST DSL ENG TM: 5KW	MULTI-LIN	21	X	
GEN ST DSL MEP-802A	G11966	GEN ST DSL ENG TM: 5KW	MULTI-LIN	348	X	
GEN ST DSL MEP-803A	G74711	GENERATOR SET DIESEL & GA	MULTI-LIN	357	X	
GENERATOR SET DIESEL E	G35851	GEN ST DSL MEP 805A	MULTI-LIN	34	X	
GENERATOR SET DIESEL E	G53778	GEN ST DSL MEP-802A	MULTI-LIN	107	X	
GENERATOR SET: DIESEL	G78306	GEN SET MEP MOD 501-A	MULTI-LIN	52	X	
POWER PLANT: ELECTRIC	P42126	POWER PLANT ELEC TM: 3	MULTI-LIN	18	X	
PWR SUPPLY PP-6224/U	P40750	PWR SUPPLY PP-2953/U	MULTI-LIN	84	X	
<b>MEDICAL EQUIPMENT</b>						
AIR COND AC 36M	A24900	AIR COND 13216E5910	A23828	35	X	
MMS CENTRAL MATERIAL	M08417	LOCAL-ASSIGNED LIN	LOCALA	4	X	
MMS INTER CARE WARD	M08599	LOCAL-ASSIGNED LIN	LOCALA	110	X	
MMS LAB GEN MF2K/M	M73425	LOCAL-ASSIGNED LIN	LOCALA	15	X	
MMS MED MAIN AUG ARMY	M09349	LOCAL-ASSIGNED LIN	LOCALA	4	X	
MMS OPERATING ROOM	M72936	LOCAL-ASSIGNED LIN	LOCALA	69	X	
MMS POST-OP/ICU DEP	M09576	LOCAL-ASSIGNED LIN	LOCALA	282	X	
MMS X-RAY DEPMEDS:	M72300	LOCAL-ASSIGNED LIN	LOCALA	2	X	
MONITOR-RECORDER ECG	M79195	VITAL SIGNS MONITOR	Z97117	20	X	
OPERATING & TRMT UNIT	P19377	CHAIR&STOOL UNIT DENT	MULTI-LIN	147	X	
X-RAY APP DEN	X38819	X-RAY APP FLD DENTAL	X37050	103	X	
<b>MATERIAL HANDLING EQUIPMENT</b>						
CONTAINER ASSY REF	C84541	LOCAL-ASSIGNED LIN	LOCALA	6	X	

**Army Reserve**  
**Major Item of Equipment Substitution List**

Table 7

<i>REQUIRED ITEM NOMENCLATURE</i>	<i>REQUIRED ITEM EQUIPMENT #</i>	<i>SUBSTITUTE ITEM NOMENCLATURE</i>	<i>SUBSTITUTE ITEM EQUIP #</i>	<i>FY 2004 QTY</i>	<i>DEPLOYABLE YES NO</i>	
SPREADER LIFT FRT CON	U12203	SPREADER LIFT ISO CON	U12204	2	X	
SPREADER LIFT ISO CON	U12204	LOCAL-ASSIGNED LIN	LOCALA	1	X	
TOPHNDLR 20 FT	T67595	CRANE WHL MTD	C36151	4	X	
TOPHNDLR 40 FT	T67731	TRK LF DD IHC M-10A	T49119	2	X	
TRK LF CBD 4000 LB	T73645	TRUCK LIFT FORK: DSL D	T49255	3	X	
TRK LFT FK VAR RCH RT	T73347	LOCAL-ASSIGNED LIN	LOCALA	189	X	
<b>OTHER PROCUREMENT</b>						
NIGHT VIS G AN/PVS-7B	N05482	NIGHT VIS GL AN/PVS-5	N04456	89	X	
<b>PETROLEUM EQUIPMENT</b>						
HOSELINE OUTFIT 4 IN	K54707	LOCAL-ASSIGNED LIN	LOCALA	16	X	
REFUEL SYS AVIA HEMTT	R66273	LOCAL-ASSIGNED LIN	LOCALA	10	X	
TANK ASSY 20000 PETRO	T12620	LOCAL-ASSIGNED LIN	LOCALA	345	X	
TANK ASY PTR 10000GAL	V12552	LOCAL-ASSIGNED LIN	LOCALA	372	X	
TANK FAB COL 50000 GL	V15325	LOCAL-ASSIGNED LIN	LOCALA	70	X	
TANK FAB PTR 3000 GAL	V15086	TANK ASY PTR 10000GAL	V12552	4	X	
TANK LIQ DISP TRLR MT	V19950	TK-PUMP UNIT MDL 1800	V12141	6	X	
TANK LIQ DISP TRLR MT	V19950	TANK LIQUID STORAGE ME	V15566	88	X	
<b>REPAIR EQUIPMENT</b>						
SHOP EQUIP GEN PURP	T10549	LOCAL-ASSIGNED LIN	MULTI-LIN	7	X	
SHOP EQUIP GEN PURP	T10549	S/E MACH SP FM BASIC	T15644	2	X	
SHOP EQUIP WOODWORK	T16988	LOCAL-ASSIGNED LIN	LOCALA	26	X	
SHOP EQUIP CON MA	S25681	LOCAL-ASSIGNED LIN	MULTI-LIN	36	X	
SHP EQ GE PU TR M EOD	S31232	SHP EQ G P TR MT: ORD	S30982	3	X	
<b>RAIL &amp; FLOAT EQUIPMENT</b>						
LANDING CRAFT MECH	L36739	LOCAL-ASSIGNED LIN	LOCALA	3	X	
<b>TACTICAL VEHICLES</b>						
BED CGO PLS M1077A1	B83002	LOCAL-ASSIGNED LIN	LOCALA	10	X	
REC VEH FT HVY M88A2	R50885	REC VEH FT MED M88A1	R50681	6	X	
SEMIT VAN: EXPAN	S74490	LOCAL-ASSIGNED LIN	LOCALA	5	X	
SEMIT VAN: REPAI	S74832	LOCAL-ASSIGNED LIN	MULTI-LIN	19	X	
STLR LB 22-1/2T M871	S70027	STLR FB 34T M872	MULTI-LIN	84	X	
STLR LB 25T M172A1	S70517	STLR LB 40T 6WHL M870	S70594	27	X	
STLR TANK FUEL M967	S10059	STLR TNK FUEL M969	MULTI-LIN	4	X	
STLR TNK 7500 G M1062	S73119	STLR TANK FUEL M967	S10059	15	X	
STLR TNK FUEL M969	S73372	STLR TANK FUEL M967	MULTI-LIN	17	X	
STLR VAN SHOP M146	S75038	LOCAL-ASSIGNED LIN	MULTI-LIN	38	X	
STLR VAN SUP M129A1C	S75175	STLR VAN CGO M128A1C	MULTI-LIN	19	X	



**Army Reserve**  
**Major Item of Equipment Substitution List**

Table 7

<i>REQUIRED ITEM NOMENCLATURE</i>	<i>REQUIRED ITEM EQUIPMENT #</i>	<i>SUBSTITUTE ITEM NOMENCLATURE</i>	<i>SUBSTITUTE ITEM EQUIP #</i>	<i>FY 2004 QTY</i>	<i>DEPLOYABLE YES NO</i>	
TK TR CBT W/O W M1977	T91308	TRANSPORTER BRDGE FLO	X23277	3	X	
TLR CGO HI MOB 11/4T	T95924	TLR CGO 3/4TON M101	W95537	91	X	
TLR FB 5 TON M1061A1	T96883	TLR FB 7 1/2T M1073	T96838	25	X	
TRAILER CARGO: HIGH MO	T95992	LOCAL-ASSIGNED LIN	LOCALA	419	X	
TRCTR FT CAT D7F DV29	W76816	LOCAL-ASSIGNED LIN	LOCALA	29	X	
TRCTR FT CAT D7F DV29	W83529	TRCTR FT CAT D7F DV29	W76816	12	X	
TRCTR FT D5BS	W76268	TRCTR FULL TRKD HI SP	T76541	35	X	
TRK CGO 2 1/2T M35A2	X40009	TRK CGO TACT	T59278	238	X	
TRK CGO 2 1/2T M35A2	X40146	TRK CGO 2 1/2T M35A2	X40009	88	X	
TRK CGO 2 1/2T M36A2	X40420	TRK CGO D/S M35A2C	X40077	6	X	
TRK CGO 5T 6X6 M813	X40831	TRK CGO D/S M35A2C	X40077	92	X	
TRK CGO 5T XLWB M814	X41105	TRK CGO D/S M813A1	X40794	7	X	
TRK CGO D/S M35A2C	X40077	TRK CGO 2 1/2T M35A2	X40009	10	X	
TRK CGO D/S M35A2C WW	X40214	TRK CGO 2 1/2T M35A2	X40009	7	X	
TRK CGO D/S M813A1	X40794	TRK CGO TACT	T59278	181	X	
TRK CGO LWB W/W M813	X40968	TRK CGO D/S M813A1	X40794	4	X	
TRK CGO PLS M1075	T40999	TRK CGO PLS M1074	T41067	99	X	
TRK CGO TACT	T39586	TRK CGO TACT W/W	MULTI-LIN	32	X	
TRK CONCRETE M919	T42725	MXR CON SMITH MDL499A	MULTI-LIN	4	X	
TRK DMP MTV W/E M1090	T64911	TRK DUMP 5T 6X6 M817	X43708	28	X	
TRK DUMP 20T F5070	X44403	TRK DUMP 5T 6X6 M817	X43708	35	X	
TRK DUMP 5T 6X6 M817	X43708	TRK DUMP 5T W/W M817	X43845	22	X	
TRK DUMP 5T W/W M817	X43845	TRK DUMP 5T 6X6 M817	X43708	47	X	
TRK LF DD IHC M-10A	T49119	TRUCK LIFT FORK: DED 6	MULTI-LIN	20	X	
TRK LF DD MDL DV43	T48941	CRANE: WHEEL MOUNTED H	MULTI-LIN	20	X	
TRK MAINT 6X4 M876	T53858	LOCAL-ASSIGNED LIN	LOCALA	28	X	
TRK TRAC M818	X59326	LOCAL-ASSIGNED LIN	LOCALA	290	X	
TRK TRAC M818 W/WN	X59463	TRK TRAC M818	X59326	15	X	
TRK TRAC M878	T60353	TRK TRAC M915	MULTI-LIN	41	X	
TRK TRAC M915	T61103	LOCAL-ASSIGNED LIN	MULTI-LIN	97	X	
TRK TRAC M916	T91656	TRK TRAC M920	T61171	87	X	
TRK TRAC M920	T61171	TRK TRAC M916	T91656	137	X	
TRK UTIL 10000 M1097	T07679	LOCAL-ASSIGNED LIN	MULTI-LIN	180	X	
TRK UTIL 1-1/4T M1026	T92310	TRK UTIL 1-1/4T M1025	T92242	47	X	
TRK UTIL 1-1/4T M1038	T61562	TRK UTIL 3/4T M1009	MULTI-LIN	18	X	
TRK UTIL 1-1/4T M998	T61494	TRK UTIL	MULTI-LIN	1571	X	
TRK VAN SHOP M109A3	X62340	INST REP SHP M185A3	K90188	10	X	
TRK VAN SHP M109A3 WW	X62477	LOCAL-ASSIGNED LIN	LOCALA	39	X	
TRK WRK M984 W/W	T63093	TRK WKR M816 W/WN	X63299	8	X	
TRUCK CARGO: MTV W/E	T61908	TRK CGO D/S M813A1	X40794	16	X	
TRUCK LIFT FORK: DSL D	T49255	TRUCK LIFT FORK: DED 6	MULTI-LIN	64	X	
TRUCK UTIL: EXPANDED	T92446	TRK UTIL 1-1/4T M1025	T92242	265	X	

**Army Reserve**  
**Major Item of Equipment Substitution List**

Table 7

<i>REQUIRED ITEM NOMENCLATURE</i>	<i>REQUIRED ITEM EQUIPMENT #</i>	<i>SUBSTITUTE ITEM NOMENCLATURE</i>	<i>SUBSTITUTE ITEM EQUIP #</i>	<i>FY 2004 QTY</i>	<i>DEPLOYABLE YES NO</i>	
<b>TEST EQUIPMENT</b>						
TS ST EL SYS AN/PSM95	T92889	ANALYZER (STE/ICEPM)	A56243	11	X	
TS ST EL SYS AN/PSM95	T92889	TEST SE AN/PSM-80(V)2	T77499	5	X	
<b>WEAPONS</b>						
LAUNCHER GRENA M203A1	L46007	LCHR GREN 40MM M203	L44595	889	X	
LMG: 5.56MM M249	M39263	MACH GUN 5.56MM M249	M09009	6	X	
MACH GUN 5.56MM M249	M09009	MG 7.62MM M60	MULTI-LIN	23	X	
MACH GUN 7.62MM M240B	M92841	MG 7.62MM M60	MULTI-LIN	54	X	
MG GRENAD MK19 MODIII	M92362	MACHINE GUN CALIBER .5	MULTI-LIN	10	X	
MNT MAC GUN 40MM MK93	M12647	MT MACH GUN MK64 MOD7	M74823	430	X	
MT MACH GUN MK64 MOD7	M74823	MNT MAC GUN 40MM MK93	M12647	7	X	
RIFLE 5.56 MM M4	R97234	RIFLE 5.56MM M16A1/A2	MULTI-LIN	2582	X	
RIFLE 5.56MM M16A2	R95035	RIFLE 5.56MM M16A1	R94977	2650	X	
RIFLE 5.56MM M16A4	R97175	RIFLE 5.56MM M16A2	R95035	555	X	
<b>WATER EQUIPMENT</b>						
DIST WATER NON-SECT	D28736	DIST WTR TNK WD6S	D28318	5	X	
TANK ASSY FABRIC	T19101	LOCAL-ASSIGNED LIN	MULTI-LIN	16	X	
TANK ASY WTR 3000 GAL	T19033	LOCAL-ASSIGNED LIN	MULTI-LIN	149	X	
WTR PURIF 3000GPH TM	W47225	WTR PURIF SET 600 GPH	W35417	3	X	
WTR QTY ANAL SET PUR	W47475	LOCAL-ASSIGNED LIN	LOCALA	99	X	

**Service**  
**Significant Major Item Shortages**

Table 8

<p><i>NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service.</i></p> <p><i>Note: Cost figures are reported in dollars.</i></p>						
<b>PR</b>	<b>NOMENCLATURE</b>	<b>TOTAL REQ'D</b>	<b># UNITS SHORT</b>	<b>UNIT COST</b>	<b>TOTAL SHTG COST</b>	<b>RATIONALE / JUSTIFICATION</b>
1	JOINT BIOLOGICAL POINT DETECTION SYSTEM (JBPDs)	175	135	1,200,000	162,000,000	Accelerate the fielding of equipment for the Bio-Detection Companies pending activation due to TAA-07.
2	FAMILY MEDIUM TACTICAL VEHICLE (FMTV) 2.5 (LMTV) and 5.0 (MTV) TON TRUCKS	13296	11166	140,000	1,563,240,000	Fills shortages and improves readiness in company-level combat support (CS) combat service support (CSS) units.
3	HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV) (INCLUDES UP-ARMORED MODEL)	17553	5275	76,000	400,900,000	Fills critical shortages and improves readiness in CS/CSS units.
4	HIGH FREQUENCY (HF) RADIO	1750	1344	42,514	57,138,816	HF Radios required for CS/CSS units.
5	ALL TERRAIN LIFTING ARMY SYSTEM (ATLAS) 10K	946	61	100,199	6,112,139	Fills critical shortages and improves readiness in CSS units.
6	CONTAINER ASSEMBLY REFRIGERATED 9K BTU	312	148	58,326	8,632,248	Provides critical refrigeration requirements for QM Mortuary Affairs and Medical units.
7	DEPLOYABLE MEDICAL SYSTEMS (DEPMEDS)	361	113	194,000	21,922,000	Fills critical shortages and improves readiness combat and field service hospital units.
8	SEMI-TRAILER FLATBED BREAKBULK/CONT 22.5 TON M87A3	1707	21	35,000	735,000	Improves readiness for break-bulk and ISO container transport.
9	MOVEMENT TRACKING SYSTEM (MTS)	10573	9,865	12,000	118,380,000	Required for units to maintain in-transit visibility and is a requirement.
10	TRUCK, ROUGH TERRAIN CONTAINER HANDLER (RTCH) 53K	275	121	525,000	63,525,000	Fills critical shortages and improve readiness in CSS units.
	<b>TOTAL:</b>				<b>\$2,402,585,203</b>	

## Chapter 3

### United States Marine Corps Reserve

#### I. Marine Corps Overview

a) Overall Marine Corps-wide Planning Guidance: The National Military Strategy (NMS) states that the United States military must meet a demanding set of objectives: to secure the US homeland, promote security and deter aggression, win the Nation's wars, and ensure military superiority. The NMS requires a joint force that can be rapidly deployed to any region of the globe and be capable of conducting sustained, high intensity operations until objectives are met. The Marine Corps stands ready to meet these challenges.

Given these objectives, the direction of the Marine Corps is confident, clear, and unambiguous. The Corps understands its role as a force in readiness but also realizes that the world is changing. For 226 years, Marines have always been innovators in order to be ready for the next war. This ingenuity and forward thinking will continue to provide security and prosperity at home. Two key themes the Marine Corps is concentrating on are the transformational qualities of Expeditionary Maneuver Warfare and the strength of



the Navy-Marine Corps Team. This transformation promises to exponentially increase the Corps' sea-based capabilities as America's medium-weight force in the years ahead. Because the Marine Corps is America's medium-weight combined arms force, it is a natural bridge between America's light-Special Operations Forces and the heavy-weight capability of the Army. As such, the Marine Corps is a true Joint Force enabler. The Marine Corps' capabilities, together with those of other services, form an

integrated array that are complementary, are not competitive, and provide America with the diversity and versatility it needs to confront different threats and environments and accomplish disparate missions. In partnership with the Navy, the Marine Corps gives America a forward engagement and expeditionary warfare force.

Additionally, the Navy-Marine Corps team has never been stronger, or more necessary for this country. The Marine Corps is America's sea-based expeditionary combined-arms force. Naval forces provide power projection from the sea uninhibited by host nation demands and free from large fixed bases. The sea-based capabilities provided by Naval forces are a critical enabler for America's relationships throughout the world. From the seabase, the Marine Corps is capable of launching and sustaining a combined-arms force hundreds of miles inland to operate in austere environments.

One of the keys to maintaining the Marine Corps' niche as America's medium weight fighting force is consistent modernization. Some of the modernization programs are truly transformational in their nature. These programs will transform the way the Marine Corps is organized, how it will operate, and how it will fight. This transformation is the product of both evolution and deliberate design. The Marine Corps' transformation is not limited to programs, but includes harnessing leap-ahead technologies, new operating concepts, better business practices, and force structure reorganizations.

b) Marine Corps-wide Equipping Policy: Crucial to enhanced warfighting readiness and more efficient business practices is the Expeditionary Force Development System (EFDS). The EFDS is an integrated system through which future warfighting capabilities are identified and developed into warfighting requirements. These requirements go through the system in which they are validated, prioritized, resourced, implemented and transitioned throughout the force to achieve desired capability. The results of the EFDS produce integrated capabilities based on fundamental concepts, which are supported by interdependent processes for development of Doctrine, Organization, Training, Materiel, Leadership and Education, People and Facilities.

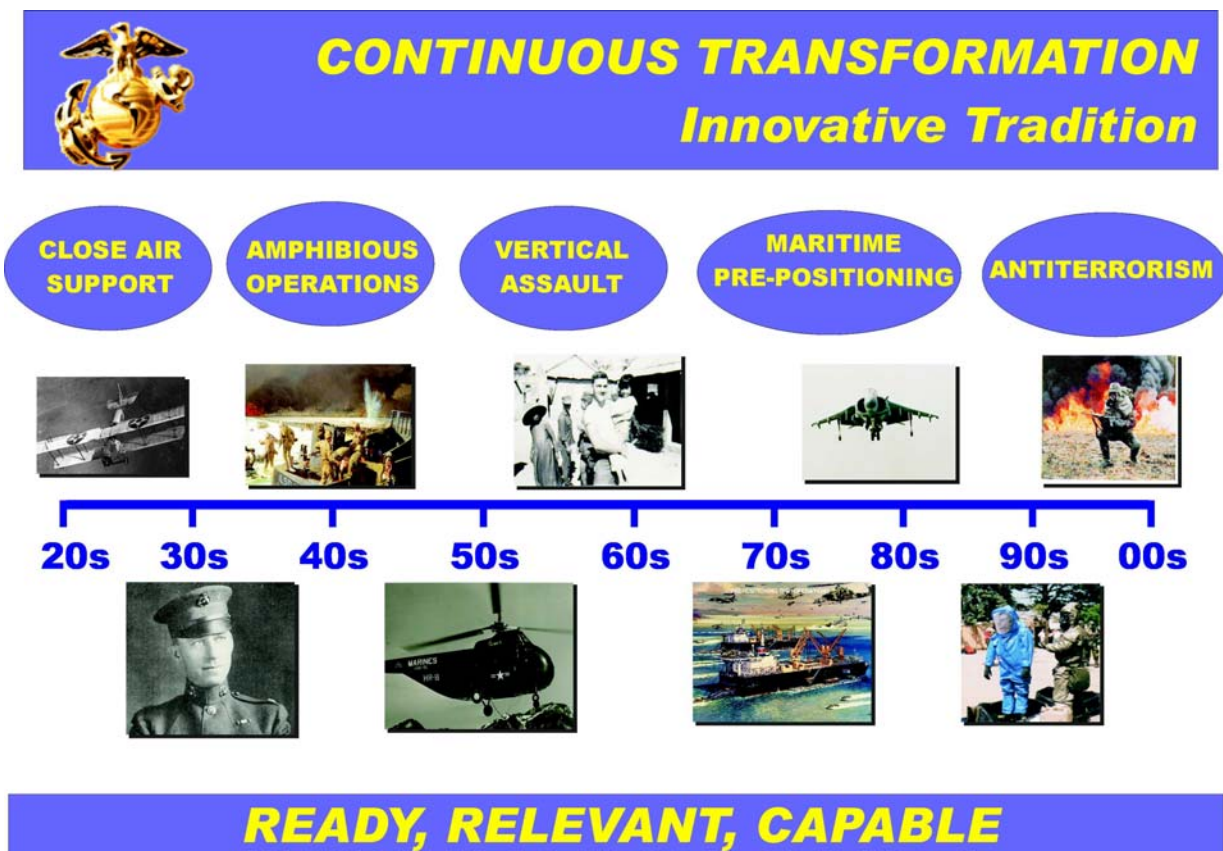
From the EFDS, the Marine Corps develops a single Approved Acquisition Objective (AAO). The AAO includes equipment modernization plans and addresses all initial issue quantities and planned sustainability requirements for the Active Component (AC) and Reserve Component (RC). There are three types of appropriations the RC utilizes for procurement of ground and aviation equipment and aircraft: Procurement Marine Corps (PMC), Aircraft Procurement Navy (APN), and National Guard and Reserve Equipment Appropriations (NGREA). PMC is the primary source of funding for ground equipment, and APN is the primary source of funding for aviation equipment. NGREA is a congressional add, not part of the formal budgeting process, which has been used historically to fund a significant portion of Reserve ground and aviation equipment requirements.

c) Marine Corps Plan to Fill Mobilization Shortages in the RC: The total wartime equipment requirement for Marine Forces Reserve (MARFORRES) is called the Table of Organization and Equipment (T/O&E). For MARFORRES, this T/O&E consists of two parts: a Training Allowance (T/A) and In-Stores assets. The equipment MARFORRES units maintain at their training sites is called the T/A. The T/A is largely determined by training requirements, space limitations at the unit training sites, and staffing levels. The balance of the MARFORRES equipment requirements is referred to as the In-Stores assets. These assets are held at the two Marine Corps Logistics Bases (MARCORLOGBASES), located at Albany, GA, and Barstow, CA.

Due to the age of equipment and past funding constraints, the operational availability of the In-stores assets is relatively low. However, upon mobilization, MARFORRES ground equipment shortfalls will be augmented with Remain Behind Equipment (RBE) left by AC units deploying to locations with pre-positioned assets. MARFORRES units may also benefit from pre-positioned assets contingent on the Operational Plan being executed. Hence, when MARFORRES units mobilize and

integrate into the gaining Marine Air Ground Task Force (MAGTF), RBE or pre-positioned equipment or both will serve to mitigate equipment shortfalls.

d) Current Marine Corps Initiatives Affecting RC Equipment: Marines are expeditionary in the truest sense of the word. While expeditionary ethos is integral to what the Marine Corps is, its history of continuous innovation and adaptation makes the Marine Corps transformational by design. The Marine Corps has a history of continuous innovation and transformation. From the early days of ship detachments, innovations such as close air support, amphibious warfare, vertical envelopment, Short Take Off and Vertical Landing (STOVL) aircraft technology, maritime pre-positioning, Ship-to-Objective Maneuver, and the establishment of organic Anti-terrorism capabilities, the Marine Corps continues to transform the manner in which our Nation projects power and influence beyond the sea.



Transformation is a synthesis across four pillars; leap-ahead technologies, organizational change, revolutionary operational concepts, and the implementation of radical business and acquisition practices.

- Technologies: The Marine Corps' history of continuous innovation has led to investments in major transformational capabilities such as the V-22, STOVL Joint Strike Fighter, Advanced Amphibious Assault Vehicle (AAAV), and Integrated Logistics

Capabilities (ILC). The ability to enhance operational and tactical mobility, lethality, stealth and sustainability will serve America well against future challenges and adversaries.

- Organizational Change: Organizational transformation is more than squads, platoons, battalions, squadrons, and the various MAGTFs that make up the Marine Corps operating forces. In addition to the programmatic innovations, the development of the 4<sup>th</sup> Marine Expeditionary Brigade (Anti-terrorism)[4<sup>th</sup> MEB (AT)] consolidates new and existing Marine Corps capabilities into a more effective and readily employable capability to meet the emerging threat of terrorism both at home and around the globe. Organizational transformation is truly institutional transformation, as it dictates not only how the Marine Corps operates, but as well, how it deals with the close-knit society known as the Marine Corps.

- Business and Acquisition Reform: Just as it is transforming its organization, the Marine Corps is also transforming its business practices. Its warfighting readiness is a reflection of balancing the demands of current requirements around the globe with the imperative to invest and be prepared for the future. This balance can – over the long haul – be achieved only if resources are reallocated from overhead and support activities to the fighting forces. To accomplish this reallocation of resources, the Marine Corps is adopting better business practices to achieve greater cost-effectiveness. Transformation of business practices is vital to achieving transformed warfighting capabilities and making the most efficient and effective use of resources.

- Revolutionary Concepts: In the Twentieth Century, mass was the coin of the realm in terms of military power. The shift in the Twenty-first Century has been away from mass to precision and speed. The Marine Corps has continuously developed revolutionary concepts that focus on precision and speed, and when supported by leap-ahead technologies and organizations, will provide new capabilities and an order of magnitude improvement in old capabilities. Central to precision and speed is achieving true expeditionary capabilities.

Drawing on transformation, the Marine Corps will continue to move aggressively forward in order to achieve new capabilities for this Nation to project power and influence from the sea. In order to be successful as a force multiplier upon mobilization, MARFORRES must possess and train on the same modern equipment as the AC. Transformation will affect all aspects of the RC, with particular emphasis on acquisition and training.

e) Marine Corps Plan to Achieve Full Compatibility between AC and RC: The Marine Corps addresses all initial quantities, planned sustainability requirements, and modernization plans for the Total Force through a single AAO. Fielding to the Total Force simultaneously, within fiscal constraints, ensures maintenance of tactical and logistical interoperability and compatibility. As discussed on page 3-9, the Marine Corps Reserve is upgrading its F/A-18As with Engineering Change Proposal (ECP) 583 to achieve operational and logistical commonality with F/A-18Cs in the AC. Additionally,

the Navy and the Marine Corps plan to participate in the USAF C-130 Avionics Upgrade Program for the KC-130T to comply with new and emerging worldwide airspace requirements and ensure that the aircraft can operate in the joint environment.

f) Other Marine Corps Specific Issues:

(1) Integrated Logistics Capabilities (ILC): The ILC is redefining and realigning the Marine Corps' supply and maintenance process by providing logisticians a greater awareness of equipment status, increasing the capacity to more rapidly and effectively respond to logistical requirements on the battlefield. The simple objective of the ILC is to avoid weighing down warfighters with the requirement to haul, protect, and administer massive amounts of supply material. The foundation of this concept and business practice is a revolutionary change in military methodology: shifting from massive inventories to small inventories. Second Force Service Support Group at Camp Lejeune, NC, is currently testing many of these new processes in a year long proof of concept to validate the direction in which the Marine Corps is heading. These efforts will allow Marine logisticians to support the battlefield of the 21<sup>st</sup> Century with a smaller logistical footprint in a more cost-effective manner.

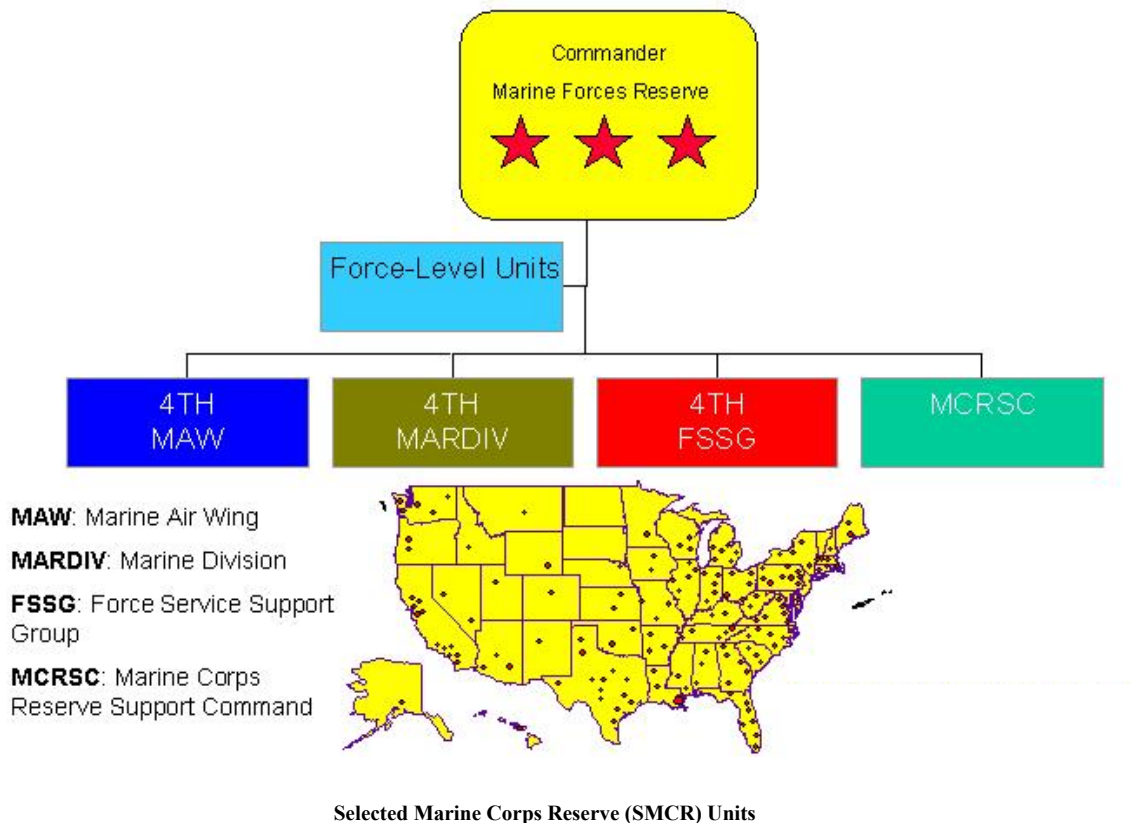
(2) Simulation: Simulation provides an innovative approach that reduces expenditures of ammunition, lessens the wear and tear on equipment, and provides a variety of combat scenarios. Two simulation systems utilized by the Marine Corps are the Indoor Simulated Marksmanship Trainer-Enhanced (ISMT-E) and the Multiple Integrated Laser Engagement System (MILES) 2000. ISMT-E is an interactive audio and video weapons simulator that enhances marksmanship training and weapons employment training. The system consists of infantry weapons that use lasers to engage a variety of lanes, video, and computer generated imagery scenarios. The MILES 2000 system provides updated capability for tactical engagement simulation for force-on-force training. MILES 2000 uses a low power, eye safe laser that replicates the direct fire characteristics of the weapons in the Ground Combat Element's infantry, assault, armor, and anti-armor systems.



## II. Marine Corps Reserve Overview

### a) Current Status of the Marine Corps Reserve

(1) General Overview: The Marine Corps Reserve continues to make an extraordinary contribution at home and abroad, most evident now during this time of crisis. Today the Marine Corps has 175,000 Marines in the AC and another 39,558 in the Selected Marine Corps Reserve. This force can be expanded by drawing from the 59,419 Marines who serve in the Individual Ready Reserve. As an integral part of the Total Force, Reserve Marines augment and reinforce the AC by performing a variety of missions in wartime and in peacetime.



MARFORRES today is a daily use force, not just dedicated solely to supporting a Major Theater War effort. Its contribution to Total Force requirements, measured in terms of work-days, has doubled from an average of 150,000 work-days per year, to well over 300,000 in recent years. This fiscal year, MARFORRES is assuming the Marine portion of the United American States (UNITAS) deployment around South America, a major OPTEMPO relief effort. The goal is to assign the UNITAS deployment to the RC every other year. MARFORRES is using the RC for manpower augmentation to Active and Reserve staffs, units, and exercise forces by providing short-term and full-time personnel to plan and perform training, administration, maintenance and logistical support not otherwise available through existing manpower levels or traditional Reserve participation (drills and annual training). These additional personnel are of absolute

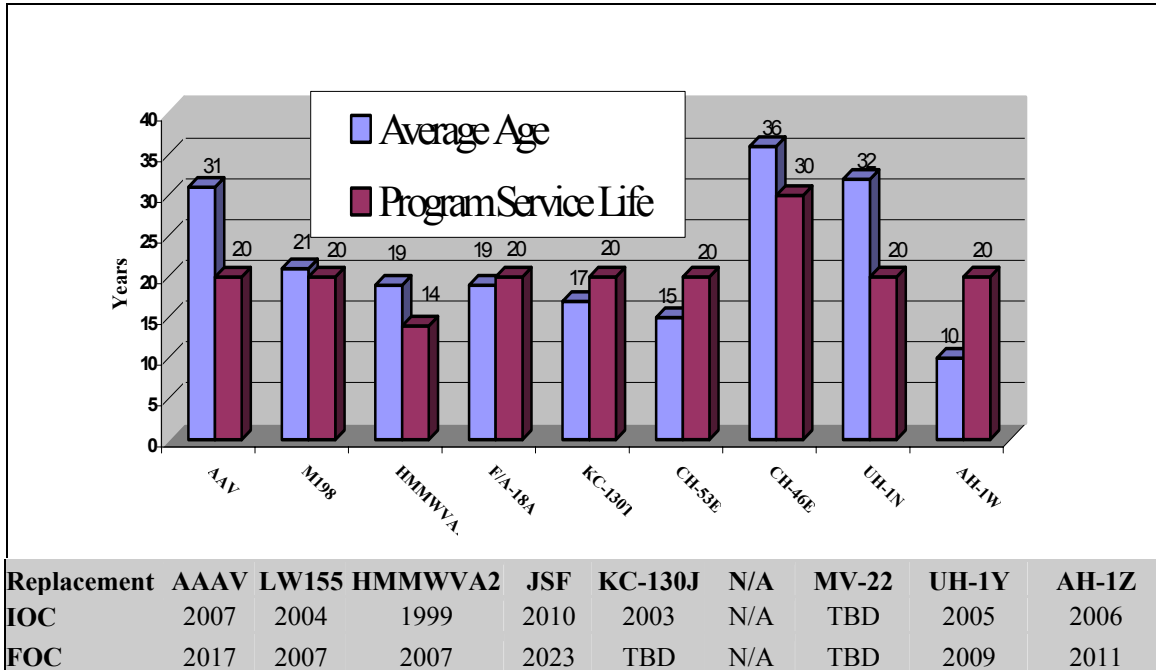
necessity in maintaining the RC's ability to plan and participate in OPTEMPO relief operations, Joint and Combined exercise, and essential combat, combat support, and combat service support training.

(2) Status of Equipment: The Marine Corps is poised to make revolutionary changes not only in structure but also in equipment. Since the war on terrorism began there has been a significant increase in funding for equipment, however, badly needed modernization can only be achieved through the continuing support of America. The effects resulting from the lack of required procurement during the 1990s are still an influence as the Marine Corps works to maintain legacy equipment. Maintaining aging legacy platforms requires increased financial and manpower investment with each passing year due to parts obsolescence and higher equipment failure rates. Additionally, maintaining legacy equipment has led to a downward spiral in which the Marine Corps annually invests more funds for operations and maintenance, leaving insufficient funds for new equipment procurement. A long-range vision for funding legacy system upgrades will not only result in better operational readiness but will also be a more responsible allocation of the Nation's resources.

(a) Equipment On-hand: The equipment the RC maintains on hand, the T/A, is largely determined by training requirements, space limitations at the unit training sites, and staffing levels. The T/A is reviewed annually and is tailored to the quantity and type of equipment that can be adequately maintained and stored at Reserve training centers. Recently, MARFORRES in coordination with Marine Corps Materiel Command completed a two-year review of T/As. It was determined that Reserve units' T/A will be reduced in order to better utilize available manpower and resources. *Table 1* provides specific information on Marine Corps Reserve equipment inventories and required equipment numbers.

(b) Average Age of Major Items of Equipment: *Table 2* provides the average age of selected major items of equipment. *Chart 1*, below, presents a graphic representation of the average age of selected ground and air equipment along with the program service life.

*Chart 1*  
**USMCR Average Age of Selected Equipment**



(c) Compatibility of Current Equipment with AC: The main compatibility issues with AC equipment continue to be in the aviation sector. The F/A-18A Engineering Change Proposal (ECP) 583 and the KC-130T Avionics Modernization Program, as described on pages 3-9 and 3-11, are two important solutions to AC/RC incompatibility.

(d) Maintenance Issues/Programs: The maintenance of aging equipment remains one of the top priorities for MARFORRES. Sufficient funding must be programmed to sustain the materiel readiness and capability of legacy systems. These systems are currently operational due to the hard work of skilled Marines and the assistance of Congress in providing resources for maintenance and spare parts. This section briefly reviews some maintenance programs and initiatives that help maintain and improve the materiel readiness of the systems in the RC.

- Depot Maintenance: The Marine Corps Depot Maintenance Program enhances equipment readiness for both the AC and RC. The RC continues to be proactive in articulating their depot maintenance requirements through the annual Marine Corps Depot Maintenance Process. However, the Marine Corps is also experiencing rising maintenance costs due to more frequent breakdowns of aging equipment. Although the repairs of many In-Stores assets are unfunded, the RC continues to receive the equipment it needs to sustain training and meet operational requirements.

- Intermediate Maintenance Initiatives: To mitigate increasing maintenance costs, MARFORRES has implemented better business practices by outsourcing and competitively bidding some of its more complex 4<sup>th</sup> and 5<sup>th</sup> echelon maintenance repair requirements. Specifically, they have outsourced some M1A1 tank maintenance requirements to Ft. Riley, Kansas, and their diesel engine remanufacture to UNICOR in Beaumont, Texas. In addition to considerable savings, these outsourcing practices resulted in faster turn-around time and increased readiness.



The HMMWVA2 will soon replace the aging A1 version pictured here.

- New Equipment Fielding: Fielding new equipment like the second generation of the High Mobility, Multi-Purpose Wheeled Vehicle (HMMWVA2), the Medium Tactical Vehicle Replacement (MTVR), and replacements for 4k forklift and extendable boom forklifts have substantially reduced the overall maintenance burden on the force.

- Service Life Extension Programs: The service life extension program established by Program Manager-Engineers for the Tractor Rubber-tired Articulated Steering Multi-purpose forklift and Road Grader are expected to substantially reduce the overall maintenance cost and maintenance requirement.

- Corrosion Control: One of the key elements in achieving an effective preventive maintenance program is a consistent corrosion control and coating program. Proper corrosion control and coating extends the life of ground equipment resulting in reduced costs associated with corrosion damage. Funding received in FY 2001 (\$600K) helped MARFORRES initiate coating and other corrosion control programs for units holding principal end items. Sustained and consistent funding in FY 2003-2007 (estimated at \$10M) is critical for the corrosion control programs to be effective.

(e) Modernization Programs and Shortfalls



F/A-18A

- F/A-18A ECP-583: The Marine Corps Reserve's top modernization priority remains unchanged from FY 2002: upgrading the fleet of 36 RC F/A-18A Hornet aircraft with ECP-583. Currently, 10 of the 36 RC upgrades still require funding. The modified "A" aircraft will have the same capabilities as a LOT 17 F/A-18C aircraft, an aircraft eight years newer. This upgrade provides the capability to self-designate precision munitions, to employ the newest generation of air-to-ground/air-to-air

weapons, to conduct night operations and to employ the latest secure, jam-resistant radios. The primary factor driving the F/A-18A upgrade is the mitigation of the current F/A-18C/D inventory shortfall, which becomes almost unmanageable beyond FY 2006. Therefore, it is essential that the F/A-18A benefit from the upgrade. In combat scenarios, the F/A-18A deficiency results in “A” squadrons only able to offer the MAGTF Commander reduced lethality and battlefield integration. ECP-583 rectifies these deficiencies. The 48 RC F/A-18s represent 19% of the total single seat strike fighters in the USMC inventory.

- CH-53E Helicopter Night Vision System (HNVS): The second



CH-53E

highest priority also remains unchanged from FY 2002: upgrading the fleet of 21 CH-53E helicopters with Helicopter Night Vision Systems (HNVS). Currently, 8 of the 21 HNVS B kits still require funding. The CH-53E HNVS “B” Kits are a third generation Forward Looking Infrared (FLIR) system whose purpose is to enhance the aircraft and aircrew’s ability to operate at night or under periods of reduced visibility. The pilot’s

display includes engine performance, flight instruments, navigation, and motion information on a variety of display pages superimposed on the panel display unit’s screen. Already being installed in active CH-53Es, this upgrade significantly expands the operational envelope of the aircraft. Failure to fund this initiative directly impacts the operational flexibility of the ACE commander and interoperability.

- Initial Issue: Over the next 5 years the RC will accumulate over \$60



Individual Equipment

million in initial issue individual and unit equipment shortages. These items are not fully budgeted in the FYDP to reach the program acquisition objective. These shortfalls must be filled to support training, operations and interoperability. The new individual equipment also represents an improvement in Force Protection, combat effectiveness, and quality of life for the individual Marine due to the superior nature of the new equipment. The types of individual equipment being procured under this initiative include but are not limited to: family of body armor, cold and extreme cold weather clothing, new load bearing system (multi mission combat packs w/self-contained hydration), laser eye protection, light weight helmet, improved sun/wind goggles, improved entrenching tool, improved gloves, and other individual equipment being developed.

- KC-130T Avionics Modernization Program (AMP): The avionics equipment installed in the KC-130T is outdated, out of production, and rapidly approaching obsolescence. The KC-130T’s configuration does not comply with emerging Communication, Navigation, and Surveillance/Air Traffic Management



(CNS/ATM) or mandated Navigation/Safety requirements. Failure to comply with emerging CNS/ATM requirements will result in exclusion from preferred oceanic routes and military airspace, longer flight times, and restrictions on approach and landing. Operational commanders can ill afford potential restrictions to the employment of these aircraft given the documented shortage of lift assets within the DoD. The Marine Corps Reserve supports the AMP program as a Department of the Navy (DON) initiative, combining the need to upgrade 28 Marine Reserve KC-130Ts with an associated need to upgrade 20 Navy Reserve C-130Ts. None of the KC-130T AMPs are funded at this time.



KC-130T releasing flare countermeasures

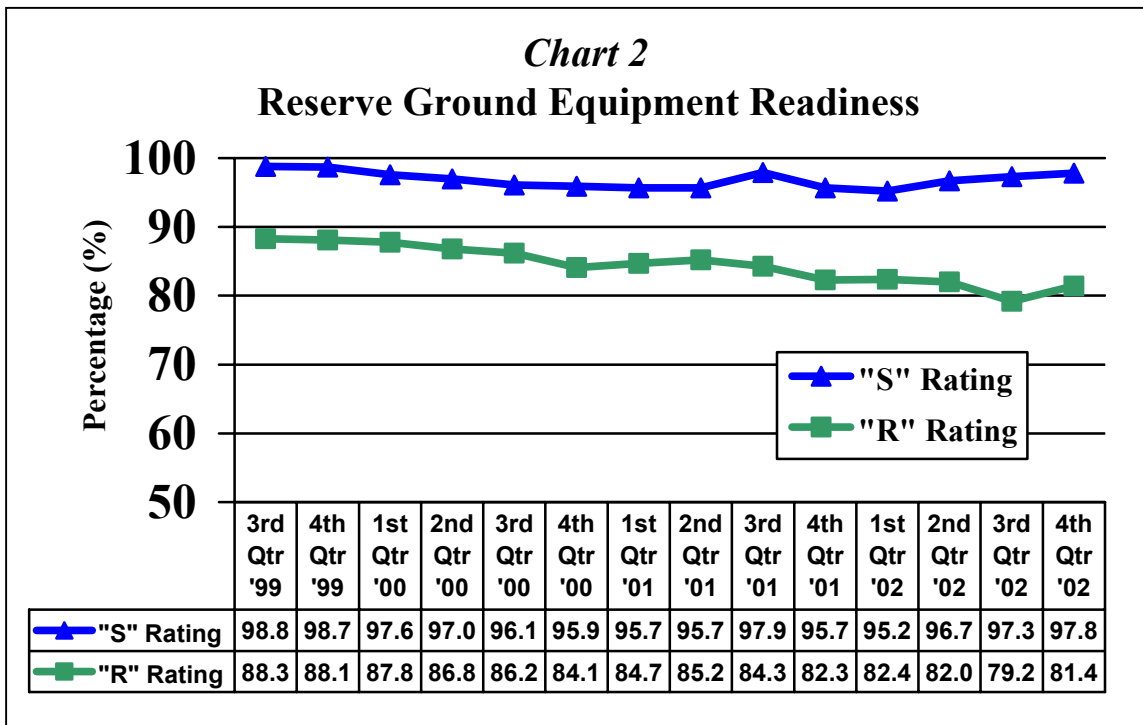
- F-5E/F Avionics Upgrade: Marine Fighter Training Squadron-401 out of Yuma, AZ operates 12 F-5Es and 1 F-5F aircraft that provide training and readiness



F-5E

mandated adversary training to Marine Aviation Weapons and Tactics Squadron-1 (MAWTS-1), F/A-18 Fleet Replacement Squadrons, and the Operating Forces. Although still effective, the F-5 is an old airframe: the "E" is nearing 30 years of age while the "F" is nearing 27 years. Alternative adversary replacement aircraft have been considered, most notably the F-16, however, funding limitations have precluded the procurement of F-16s to replace the aging F-5s. The Marine Corps plans to upgrade its 12 F-5E fleet by acquiring Swiss F-5Es, which are nearly 8 years newer with an average of only 2,000 flight hours on the airframes. The Swiss F-5Es, while newer and very low Fatigue Life Expended, still need a modernized radar system - the APG-66. This new radar is of utmost importance because it extends the aircraft's radar range from a mere 5 miles to 35 miles. None of the required APG-66 radars are funded at this time.

(f) Overall Equipment Readiness: The general state of readiness of the Marine Corps Reserve today, as shown in *Chart 2*, is good. This condition is attributed to the spirited can do attitude of the Marines and increased funding in the procurement and operations and maintenance (O&M) accounts provided by Congress in FY 2002. Most important, the Marine Corps Reserve remains ready and prepared to augment the AC in support of standing and crisis action requirements.



RC equipment consists of the Training Allowance (T/A), located at the Reserve Training Centers and In-Stores assets held at Marine Corps Logistics Bases (MARCORLOGBASES). In order to better describe the state and readiness of the equipment, two variables are used here. The Supply/Equipment On-Hand, or the "S" rating, is the percentage of total on-hand and In-Stores equipment as compared to the total number authorized in the Table of Organization and Equipment (T/O&E). The Equipment Operational Capability, or "R" rating, is the total percentage of equipment on-hand or In-Stores that is mission capable. The RC's T/A is typically maintained in a high readiness condition while the operational readiness of the In-Stores assets is lower. Lower In-Stores equipment readiness is due to a combination of the age of legacy equipment, impact of past funding shortfalls, and the lower priority of funding for the maintenance of In-Stores assets. It is getting more difficult and costly to maintain these systems at the desired levels of operational readiness.

Headquarters, Marine Corps, in conjunction with the Logistics Management Institute, and under the auspices of the Office of the Secretary of Defense/Reserve Affairs' (OSD/RA), Reserve Unit Priority System, developed the Marine Corps Readiness Equipment Module-Reserves (MCREM-R) to provide OSD mandated Reserve readiness reports. The MCREM-R process assists MARFORRES in calculating the equipment ratings for the Reserve Table of Equipment and facilitates the application of the In-Stores assets, which provides better visibility of readiness and in-stores equipment. In addition to improving and assisting with ground equipment readiness reporting, MCREM-R enables materiel readiness managers to "dig down" and analyze the causes and reasons why their equipment is deadlined.

b) Changes Since Last NGRER

- The Marine Corps took receipt of two High Mobility Artillery Rocket



HIMARS Test Fire

System (HIMARS) Launchers during the summer of 2002 to begin a fleet evaluation period. The evaluation period will begin in FY 2003 and will be completed in the fourth quarter of FY 2004 at which point the Marine Corps will participate in the Army's HIMARS Operational Test. The Marine Corps plans to establish an interim capability in the second quarter of FY 2005 and a target Initial Operational Capability scheduled for FY 2007.

- In support of Operation ENDURING FREEDOM, two squadrons, HMH-772 based at Naval Air Station Willow Grove, PA, and HMH-769 based at Edwards Air Force Base, CA, were activated. This activation provided CH-53E helicopters to augment active duty forces by increasing the heavy and long-distance lift capabilities of the 24<sup>th</sup> and 11<sup>th</sup> Marine Expeditionary Units (MEU) Special Operations Capable (SOC) in the Mediterranean. Additional activated units from the 4<sup>th</sup> Marine Air Wing (MAW) include the Marine Aerial Refueler Transport (VMGR) Squadrons 234 and 452. These C130T squadrons also provided support to the 24<sup>th</sup> and 11<sup>th</sup> MEUs (SOC). Ground units from the 4<sup>th</sup> MAW include an early warning control detachment, MACS-24 to provide early warning radar support.

As of 16 December 2002, a total of 5,063 Reserve Marines, including two infantry battalions, have been mobilized in support of Operation ENDURING FREEDOM and the Global War on Terrorism. The number currently on duty is 3,833. The Marine Corps plans to maintain a mobilized force of approximately 3,900 Marines but the number of Marines may temporarily increase above this level during periods of turnover. The missions assigned to Marine Corps Reserve in the GWOT are a clear reflection that MARFORRES possesses capabilities across the full spectrum of military operations.

c) Future Years Program (FY 2004-FY 2006)

(1) FY 2006 Equipment Requirements: The Marine Corps Reserve has numerous unfunded priorities that address critical elements across the MAGTF, especially in ground equipment and aviation modernization. Additional funding for modernization as well as for equipment shortages would vastly improve the RC's mission capability. RC equipment deficiencies can be found in the on-hand equipment list, *Table 1*.



## (2) Anticipated New Equipment Procurements

- MV-22 Osprey: The MV-22 Osprey tiltrotor is a revolutionary, advanced technology vertical/short takeoff and landing (V/STOL), multi-purpose tactical aircraft to replace the current fleet of Vietnam era CH-46E and CH-53D aircraft. One of MARFORRES' long-term goals include accelerated fielding of the MV-22 Osprey to the RC. Some of the MV-22's missions include amphibious and land assault, raid operations, medium cargo lift, and tactical recovery of aircraft and personnel. The MV-22 Osprey is capable of carrying 24 combat-equipped Marines or a 10,000 pound internal load. It also has a strategic self-deployment capability with a 2,100 nautical mile range with a single aerial refueling.



MV-22 Osprey

- Advanced Amphibious Assault Vehicle (AAAV): The AAAV will join the MV-22 and Landing Craft, Air Cushion as an integral component of the amphibious triad required to execute Expeditionary Maneuver Warfare. The AAAV will allow naval expeditionary forces to eliminate the battlefield mobility gap and, for the first time in the history of naval warfare, maneuver ashore in a single seamless stroke giving both the ships and land forces sufficient sea space for maneuver, surprise, and protection. The AAAV's unique combination of offensive firepower, armor, Nuclear, Biological and Chemical protection, and

high speed mobility on land and sea represent major breakthroughs in the ability of naval expeditionary forces to avoid an enemy's strengths and exploit its weaknesses. The AAAV remains the number one ground acquisition program of the Marine Corps.



AAAV

- High Mobility Artillery Rocket System (HIMARS): HIMARS is a C-130 transportable, wheeled, indirect fire weapon system capable of firing rockets and missiles in the Multiple Launch Rocket System Family of Munitions. HIMARS extends the range of available fire support from 30 KM to 60+ KM for engaged warfighting forces. Current plans are to field two battalions in the 14th Marine Regiment with 18 launchers each. The Marine Corps plans to establish an interim capability in the second quarter of FY 2005 and a target Initial Operational Capability scheduled for FY 2007.



HIMARS

- Lightweight 155mm (LW155) Howitzer: The LW 155 is the world's first 155mm howitzer weighing less than 9,000 pounds. It offers greater ground mobility and improved reaction times, compared to the M198 Howitzer it is designed to replace. The LW 155 will meet increased operational thresholds in lethality, survivability, mobility, deployability, and sustainability required to support maneuver warfare.



LW 155 Howitzer

- Medium Tactical Vehicle Replacement (MTVR): The MTVR is a state-of-the-art, commercially based medium truck with greater mobility, lift, and Reliability, Availability, Maintainability and Durability (RAM-D) and will replace the current aging fleet of M939/M809 5-ton trucks. The MTVR has an increased payload of 7.1 tons cross-country and 15 tons on hard surface roads and can simultaneously tow up to an 11 ton towed load. The MTVR has a 70% off road and 30% on road mission profile and is capable of sustained speeds of 30 mph cross-country.



7 ton MTVR (left) compared to older 5 ton

- Quadruple Container (QUADCON) and Palletized Container (PALCON): QUADCONS and PALCONS provide the Marine Corps with a fully intermodal transport capability emphasizing dimensional standardization and International Standards Organization to ensure compatibility. MARFORRES units store and transport small organic equipment and consumable supplies in the containers. The containers are capable of safe and efficient use in all areas, under all climatic conditions. They can be transported on MARFORRES organic vehicles, over all types of terrain in which MAGTFs deploy. The containers are also transportable on Navy amphibious ships, commercial cargo ships, and Air Force prime mission aircraft. At this time only 16% of the PALCONS and 37% of the QUADCONS are



Palletized Containers

funded.

(3) Anticipated Transfers from AC to RC: Table 5 shows the planned equipment transfers from the AC to the RC.

(4) Anticipated Withdrawals from RC Inventory: Table 5 shows the planned withdrawals of equipment from the RC inventory.

(5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2006 and the Effects of These Shortages on Overall Equipment Readiness: The top modernization priority, the F/A-18A ECP-583, is still deficient ten kits for the completion of the program. Six upgrades will take place in FY 05 with four upgrades remaining to complete the program in FY 06. The understated problem is that even with this completion schedule there are four F/A-18A aircraft which will still require this extremely important upgrade after FY 05. This lack of the ECP-583 upgrades will have an impact on the F/A-18's ability to conduct night operations and to employ the latest guided munitions.

Essential individual equipment is another crucial shortfall with two of the five units, or \$24M, left unfunded after FY 2006. Body armor, cold weather clothing, and other essential personal gear are critical to maintaining the operational readiness and mission effectiveness of Marine Corps Reserve personnel. In addition, Reserve units would greatly benefit from PALCONS and QUADCONS by providing effective organization and rapid deployment of equipment. Further equipment and modernization shortfalls are listed in *Table 8*.

d) Summary/Conclusions: Sixty years ago America was the victim of another tragic attack -- the Japanese bombing of Pearl Harbor. The Marine Corps Reserve played a significant role then in the Nation's response-making up approximately 70 percent of the Marines, including 90 percent of Marine aviators, as the Marine Corps grew from fewer than 20,000 to almost half a million in 1944. The phenomenal feats of those Marines created a legacy of honor, courage, and commitment that has helped to shape and motivate future generations.



**MV-22 Osprey over DC**

Today, the Marine Corps Reserve continues to be a Ready, Willing, and Able force. Already forward deployed in hundreds of cities across America, Marine reservists stand ready to play a leading role in homeland defense. Their ability to respond rapidly and to interact with civilian agencies will contribute immeasurably to the homeland defense. The role of Reserve units in homeland defense will not detract from their primary missions of augmenting and reinforcing the AC. The Reserve budget has been adequate to sustain the readiness of

Marine reservists. However, they have been maintaining readiness at the expense of modernization and investment in their infrastructure. Modernization of the RC must parallel the modernization of the AC to ensure that the Total Force is ready to fight and win tomorrow's battles. The Marines in the RC are working hard to maintain and improve the readiness of their equipment, which continues to age and to require more frequent repairs. The more burdensome these repairs become to the units, the more the quality of training will diminish. The key to sustaining Reserve readiness in the long

term is to continue to replace the current legacy systems. The funding level must be sufficient to accelerate the pace of modernization in order to shorten the period of increased expense for sustainment of the aging legacy systems. The outlook for resourcing and long-term readiness is improving as the RC transitions into the 21st Century. The RC remains an integral part of the Marine Corps Total Force and continues to be the Corps' most visible institutional link to American society.

**USMCR**  
**Consolidated Major Item Inventory Requirements**

Table 1

<p><i>NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.</i></p>							
<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>Beginning FY 2004 COST</b>	<b>Beginning FY 2004 QTY O/H</b>	<b>Beginning FY 2005 QTY O/H</b>	<b>Beginning FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY REQ</b>
<b>AIRCRAFT</b>							
AIRCRAFT, FIGHTER, F-5, MODEL E	F-5E	7,865,000	12	12	12	12	12
AIRCRAFT, FIGHTER, F-5, MODEL F	F-5F	11,520,000	1	1	1	1	1
AIRCRAFT, REFUELING/CARGO, KC-130, MODEL T	KC-130T	33,420,000	28	28	28	28	28
AIRCRAFT, UTILITY CARGO, C-20G	C-20G	37,465,000	1	1	1	1	1
AIRCRAFT, UTILITY CARGO, UC-12 MODEL B	UC-12B	3,341,000	4	4	4	4	4
AIRCRAFT, UTILITY CARGO, UC-35C	UC-35C	4,500,000	2	2	2	2	2
AIRCRAFT, FIGHTER/ATTACK, F/A-18, MODEL A	F/A-18A	41,605,000	48	48	48	48	48
AIRCRAFT, HELICOPTER, ATTACK, AH-1W	AH-1W	15,147,000	40	40	40	40	40
AIRCRAFT, HELICOPTER, CARGO, CH-46, MODEL E	CH-46E	10,913,000	26	26	26	26	26
AIRCRAFT, HELICOPTER, CARGO, CH-53, MODEL E	CH-53E	30,182,000	21	21	21	21	21
AIRCRAFT, HELICOPTER, UTILITY, UH-1, MODEL N	UH-1N	5,332,000	20	20	20	20	20
HELICOPTER EXPEDIENT REFUELING SYSTEM	B1135	112,049	10	10	10	10	11
<b>COMMUNICATIONS, OTHER</b>							
AIRBORNE MOBILE DIRECT AIR SUPT CNTRL	A0010	684,949	2	2	2	2	2
AUTO TELEPHONE AN/TTC-42(V)	A0248	917,671	10	10	10	10	10
COMM GEAR	A0011	70,000	132	132	132	132	172
COMM GEAR	A1530	60,800	44	44	44	44	54
COMMUNICATIONS CENTRAL (MECCS)	A0274	500,000	4	4	4	4	4
COMMUNICATIONS PLATFORM, AIR DEFENSE	A0025	470,456	2	2	2	2	2
COMMUNICATIONS TECH CTRL CENTER	A0311	185,934	5	5	5	5	5
COMMUNICATIONS TERMINAL, AN/TSC-93B	A0814	537,000	4	4	4	4	4
DECODER GROUP	A0465	29,837	14	14	14	14	14
GROUND MOBILE FORCE SATELLITE COM TERMINAL	A0812	1,000,000	1	1	1	1	1
INTERROGATOR SET	A0881	32,447	12	12	12	12	12
MANPACK SATELLITE COMMUNICATIONS TERMINAL	A0918	48,000	89	89	89	89	89
QUICK REACTION SATELLITE ANTENNA	A1310	225,000	3	3	3	3	3
RADAR SET, FIREFINDER	A1440	6,500,000	4	4	4	4	4
RADAR SET, LIGHTWEIGHT 3D	A1503	26,500,000	2	2	2	2	2
RADAR SET, LTWT AIR TRAFFIC CONTROL, AN/TPS-63B	A1500	3,865,675	4	4	4	4	4
RADIO SET, AN/GRC-171B	A1818	41,999	82	82	82	82	82
RADIO SET, AN/GRC-193B (V)	A1795	42,987	66	66	66	66	66
RADIO SET, AN/MRC-138B(V)	A1935	78,500	223	237	237	237	237
RADIO SET, AN/MRC-145	A1957	95,840	315	315	315	315	351
RADIO SET, AN/PRC-104 B(V)	A2065	20,000	635	635	635	635	635

**USMCR**  
**Consolidated Major Item Inventory Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
RADIO SET, AN/PRC-119F	A2079	4,422	606	606	606	606	606
RADIO SET, AN/TSQ-207	A0821	2,047,000	2	2	2	2	2
RADIO SET, AN/TYQ-101	A0021	199,999	3	3	3	3	4
RADIO SET, AN/VRC-83(V)2	A2164	18,360	112	112	112	112	112
RADIO SET, MANPACK, AN/PRC-119A	A2070	10,370	1,412	1,412	1,412	1,412	1
RADIO SET, UHF, AN/PRC-113(V)3	A2069	8,529	334	334	334	334	364
RADIO SET, VEHICULAR, AN/VRC-88A	A2167	12,832	415	415	415	415	501
RADIO SET, VEHICULAR, AN/VRC-88D	A2074	11,475	381	381	381	381	436
RADIO SET, VEHICULAR, AN/VRC-89A	A2168	17,500	61	61	61	61	91
RADIO SET, VEHICULAR, AN/VRC-89D	A2075	18,155	38	38	38	38	40
RADIO SET, VEHICULAR, AN/VRC-90A	A2169	11,079	69	69	69	69	138
RADIO SET, VEHICULAR, AN/VRC-90D	A2076	12,000	12	12	12	12	14
RADIO SET, VEHICULAR, AN/VRC-91D	A2077	18,680	48	48	48	48	48
RADIO SET, VEHICULAR, AN/VRC-92D	A2078	20,920	33	33	33	33	33
RADIO TERMINAL SET, AN/MRC-142	A1955	201,851	64	64	64	64	64
RADIO TERMINAL, DIGITAL TROPOSCATTER	A2179	672,120	22	22	22	22	24
SATELLITE COMMUNICATIONS CENTRAL SWITCHBOARD, TELEPHONE, AUTOMATIC, SB-3614	A0655	425,000	3	3	3	3	3
SWITCHING UNIT, TELEPHONE, AUTOMATIC, SB-3865	A2508	228,535	59	59	59	59	59
TACTICAL AIR OPERATIONS MODULE (TAOM)	A2525	4,946,240	6	6	6	6	6
TACTICAL DEFENSE ALERT, RADAR SET	A0891	235,000	11	11	11	11	12
<b>ENGINEER &amp; OTHER EQUIPMENT</b>							
BOAT, BRIDGE ERECTION	B0114	170,000	18	18	18	18	48
BOTTLE CLEANING/CHARGING STATION (BCCS)	E0145	378,983	2	2	2	2	2
BRIDGE ERECTION SET -MGB-	B0120	640,000	2	2	2	2	8
BRIDGE, ARMORED VEHICLE LAUNCHED	E0150	592,545	8	8	8	8	8
BRIDGE, MEDIUM GIRDER, DRY GAP	B0152	1,200,000	4	4	4	4	8
BRIDGE, SCISSOR F/ AVLB	E0149	200,000	12	12	12	12	12
CHARGER, BATTERY	E0167	4,941	37	37	37	37	37
FUEL DISP. SYS TACTICAL AIRFIELD FIRESTONE	B0675	386,481	4	4	4	4	16
GENERATOR SET, 100 KW, 60 HZ, SKID MOUNTED	B1045	39,960	29	29	29	29	33
GENERATOR SET, 3 KW, 60 HZ, SKID- MOUNTED	B0730	5,050	214	214	214	214	285
GENERATOR SET, SKID-MTD, TACT QUIET, 10 KW 400	B0921	15,303	25	25	25	25	26
GENERATOR SET, SKID-MTD, TACT QUIET, 10 KW 60 H	B0891	12,100	188	188	188	188	319
GENERATOR SET, SKID-MTD, TACT QUIET, 30 KW 400	B0971	16,080	8	8	8	8	8
GENERATOR SET, SKID-MTD, TACT QUIET, 30 KW 60 H	B0953	22,012	182	182	182	182	240
GENERATOR SET, SKID-MTD, TACT QUIET, 60 KW 400	B1016	20,086	16	16	16	16	16
GENERATOR SET, SKID-MTD, TACT QUIET, 60 KW 60 H	B1021	25,063	125	125	125	125	146

**USMCR**  
**Consolidated Major Item Inventory Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
GRADER, ROAD, MOTORIZED	B1082	190,000	20	20	20	20	20
LINE CHARGE LAUNCH KIT, TRAILER MOUNTED	B1298	3,945	21	21	21	21	50
POWER UNIT, FRONT, 12 1/2 TON, 4X4	D0209	180,000	169	169	169	169	302
PUMP MODULE, FUEL (SIXCON)	B1580	41,000	48	48	48	48	129
SCRAPER-TRACTOR, WHEELED	B1922	257,000	10	10	10	10	18
STORAGE TANK MODULE, FUEL (SIXCON)	B2085	10,100	142	142	142	142	383
TRACTOR, ALL WHEEL DRIVE W/ATTACHMENTS	B2482	129,000	14	14	14	14	28
TRACTOR, FULL TRACKED, W/ANGLE BLADE	B2460	95,000	26	26	26	26	29
TRACTOR, MEDIUM, FULL TRACKED, D7G CATERP	B2462	192,500	47	47	47	47	54
TRACTOR, ROUGH TERRAIN, ARTICULATED STEER	B2567	180,000	104	104	104	104	104
WATER PURIFICATION UNIT - REVERSE OSMOSIS	B2604	262,000	39	39	39	39	63
<b>GUIDED MISSILES</b>							
INTERROGATOR SET, IFF (STINGER)	E0727	18,115	196	196	196	196	196
INTERROGATOR SET, PROGRAMMER (STINGER)	E0726	19,121	22	22	22	22	22
JAVELIN	E0207	125,000	24	24	24	24	64
PEDESTAL MOUNTED STINGER (AVENGER)	E1836	1,059,000	60	60	60	60	60
TRACKER, INFRARED, GM, DRAGON	E3175	13,039	50	50	50	50	50
<b>GENERAL PROPERTY</b>							
CONTAINER HANDLER, ROUGH TERRAIN, 50,000 LB	B0391	350,000	2	2	2	2	11
CRANE, HIGH SPEED, HIGH MOB, W/PILE DRIVER CAP	B0443	230,000	14	14	14	14	32
CRANE, ROUGH TERRAIN, HYDRAULIC LIGHT	B0446	85,000	43	43	43	43	45
MODULAR UNIVERSAL LASER EQUIPMENT (MULE)	E1045	500,032	80	80	80	80	135
EQUIPMENT SET, NIGHT VISION	E0330	54,000	184	184	184	184	184
NIGHT VISION SIGHT, CREW SERVED WEAPON	E1159	24,900	411	411	411	411	411
NIGHT VISION SIGHT, TRACKER, INFRARED	E1153	62,821	88	88	88	88	96
<b>OTHER SUPPORT</b>							
AIR CONDITIONER, MCS HORIZONTAL, 60HZ 18,000 BTU	B0002	5,356	31	31	31	31	67
AIR CONDITIONER, MCS HORIZONTAL, 60HZ 9,000 BTU	B0001	4,200	18	18	18	18	48
AIR CONDITIONER, MCS VERTICAL, 60,000 BTU	B0007	11,000	21	21	21	21	24
AIR CONDITIONER, MCS, SKID MOUNTED	B0011	3,998	22	22	22	22	61
AIR CONDITIONER, VERTICAL, 60/400HZ, 18,000 BTU	B0012	5,600	213	213	213	213	213
INTERFACE SYSTEM, COMMUNICATIONS	A3270	496,660	3	3	3	3	3
LIGHTWEIGHT DECONTAMINATING SYSTEM	B1291	24,349	105	105	105	105	252
POSITION AZIMUTH DETERMINATION SYS(PADS)	E1210	417,826	21	21	21	21	21



**USMCR**  
**Consolidated Major Item Inventory Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
<b>TACTICAL VEHICLES</b>							
SEMI-TRAILER, LOWBED, 40 TON	D0235	45,599	40	40	40	40	54
SEMI-TRAILER, REFUELER, 5,000 GAL, 4-WHEEL	D0215	98,064	13	13	13	13	50
TRAILER, POWERED, WRECKER/RECOVERY, 4X4	D0877	205,342	16	16	16	16	21
TRAILER, RIBBON BRIDGE	D0881	56,000	44	44	44	44	95
TRAILER, TANK, WATER, 400 GAL, 1 1/2 TON 2-WHL	D0880	12,955	266	266	266	266	266
TRK AIRCRAFT CRASH & STRUCTURE FIRE FIGHTING	D1064	240,000	14	14	14	14	18
TRK CARGO, 5T EXTRA LONG WHL BASE, W/WINCH	D1061	157,000	96	96	96	96	96
TRK DUMP M817/M929/M930	D1072	185,000	80	80	80	80	80
TRK, TOW CARRIER, W/SA, 1 1/4T, W/EQUIP, HMMWV	D1125	73,729	164	164	164	164	164
TRK, UTIL, ARMT CARR, W/SA 1 1/4T W/EQUIP HMMWV	D1159	72,113	309	309	309	309	309
TRK, UTIL, CARGO, 5/4 T W/EQUIP HMMWV	D1158	55,000	1,013	1,013	1,013	1,013	1
TRLR, 20 TON 4X4 CARGO W/CRANE	D0879	134,794	43	43	43	43	65
TRLR, 5TH-WHL 4X4, SEMI-TRLR ADAPTER	D0878	88,801	42	42	42	42	56
TRLR, POWERED, 22 1/2 T, CONTAINER HAULER, 4X4	D0876	72,837	90	90	90	90	233
TRUCK, 7-TON CARGO 6x6 MTRV	D0198	133,900	0	1,198	1,198	1,198	1
TRUCK, AMB, 2 LITTER, SOFT TOP, 1 1/4 TON HMMWV	D1002	61,520	47	47	47	47	47
TRUCK, AMB, 4 LITTER ARMD, 1 1/4 TON HMMWV	D1001	107,323	91	91	91	91	91
TRUCK, CARGO, 5 TON, 6X6, W/O WINCH	D1059	155,000	849	849	849	849	849
TRUCK, FORKLIFT, EXTENDABLE BOOM	B2561	96,146	60	60	60	60	93
TRUCK, FORKLIFT, ROUGH TERRAIN, 4,000 LB	B2566	43,250	66	66	66	66	99
TRUCK, TRACTOR, 5 TON, 6X6, W/O WINCH	D1134	160,000	47	47	47	47	51
TRUCK, UTILITY, SHELTER CARRIER, W/OW, 1 1/4T	D1180	50,778	38	38	38	38	38
TRUCK, WRECKER, 5 TON, 6X6	D1212	280,000	58	58	58	58	58
LAV, ANTI-TANK	E0942	1,352,000	16	16	16	16	16
LAV, COMMAND AND CONTROL (BN)	E0946	868,000	8	8	8	8	8
LAV, LIGHT ASSAULT, 25MM	E0947	906,000	60	60	60	60	60
LAV, LOGISTICS	E0948	825,000	20	20	20	20	20
LAV, MAINTENANCE/RECOVERY	E0950	488,972	7	7	7	7	7
LAV, MORTAR	E0949	1,918,000	8	8	8	8	8
<b>TRACKED COMBAT VEHICLES</b>							
ASSAULT AMPHIBIOUS VEHICLE, COMMAND	E0796	1,052,515	5	5	5	5	10
ASSAULT AMPHIBIOUS VEHICLE, PERSONNEL	E0846	2,150,000	42	42	42	42	42
ASSAULT AMPHIBIOUS VEHICLE, RECOVERY	E0856	2,000,000	6	6	6	6	8
RECOVERY VEH FULL TRACK M88	E1377	758,913	11	11	11	11	11
TANK, COMBAT, FT, 120MM GUN	E1888	4,300,000	64	64	64	64	64



**USMCR**  
**Consolidated Major Item Inventory Requirements**

Table 1

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
<b>TEST EQUIPMENT</b>							
TEST KIT, SUPPLEMENTAL GMS EQUIPMENT	E1908	157,229	2	2	2	2	2
TEST SET GROUP, GM INFRARED TRACKER	E1917	35,928	4	4	4	4	4
TEST SET, GM	E1912	393,562	19	19	19	19	32
TEST SET, GM SYSTEM (DRAGON)	E1916	331,844	4	4	4	4	4
TEST SET, GUIDED MISSILE, INFRARED TRACKER	E1915	109,243	1	1	1	1	8
TEST SET, MISSILE GUIDANCE	E1911	20,366	24	24	24	24	32
TEST SET, NIGHT VISION	E1947	27,000	1	1	1	1	1
<b>WEAPONS</b>							
CIRCLE, AIMING	E0180	2,612	143	143	143	143	143
HOWITZER, MEDIUM, TOWED, 155MM	E0665	750,000	90	90	90	90	90
LAUNCHER, ASSAULT ROCKET, 83MM (SMAW)	E0915	10,299	216	216	216	216	216
LAUNCHER, TUBULAR, F/GM TOW WEAPON SYSTEM	E0935	73,536	182	182	182	182	182
MACHINE GUN, 40MM	E0994	14,581	480	480	480	480	480
MACHINE GUN, CAL .50, BROWNING, HB FLEXIBLE	E0980	14,002	482	482	482	482	482
MACHINE GUN, MEDIUM, 7.62MM, GROUND VERSION	E0989	8,000	794	794	794	794	794
MORTAR, 60MM LWCMS	E1065	10,658	72	72	72	72	72
MORTAR, MEDIUM, EXTENDED RANGE	E1095	24,717	72	72	72	72	72
MUZZLE VELOCITY SYSTEM (M94)	E1145	14,500	32	32	32	32	32
ORDINANCE	E1035	520,000	5	5	5	5	5
RECEIVER, INFRARED	E1837	24,068	109	109	109	109	109
RIFLE, SNIPER, 7.62MM, W/O EQUIPMENT	E1460	1,744	76	76	76	76	91
RIFLE, SNIPER, SEMI-AUTO, CAL .50, REPEATER	E1475	6,405	34	34	34	34	34

**USMCR**  
**Average Age of Equipment**

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for fiscal year (FY) 2004.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>AVERAGE AGE</b>	<b>REMARKS</b>
<b>AIRCRAFT</b>			
AIRCRAFT REFUELER	D0215	19.0	2/3 of equipment will be 27 yrs old. Remaining 1/3 will be 8 yrs old by 2002.
AIRCRAFT, FIGHTER, F-5E	F-5E	30.0	
AIRCRAFT, FIGHTER, F-5F	F-5F	27.0	
AIRCRAFT, FIGHTER/ATTACK, F/A-18A	F/A-18A	19.0	
AIRCRAFT, HELICOPTER, ATTACK, AH-1W	AH-1W	10.0	
AIRCRAFT, HELICOPTER, CARGO, CH-46E	CH-46E	36.0	
AIRCRAFT, HELICOPTER, CARGO, CH-53E	CH-53E	15.0	Nine aircraft are on average 19 years, 5 were new between FY 96 and FY00
AIRCRAFT, HELICOPTER, UTILITY, UH-1N	UH-1N	32.0	
AIRCRAFT, REFUELING/CARGO, KC-130T	KC-130T	17.0	
AIRCRAFT, UTILITY/CARGO, UC-12B	UC-12B	22.0	
AIRCRAFT, UTILITY/CARGO, UC-35C	UC-35C	5.0	
AIRCRAFT, UTILITY/CARGO, UC-35D	UC-35D	2.0	
<b>COMMUNICATIONS, OTHER</b>			
RADIO SET MRC-138B	A1935	23.0	
RADIO TERMINAL AN/TRC-170	A2179	12.0	
<b>ENGINEER &amp; OTHER EQUIPMENT</b>			
GENERATOR SET, 100KW	B1045	28.0	
WATER PURIFICATION UNIT - REVERSE OSMOSIS	B2604	20.0	Being replaced with the EROWPU
<b>GENERAL PROPERTY</b>			
CRANE MOUNTED TRUCK	B0443	15.0	
<b>TACTICAL VEHICLES</b>			
LAV, LIGHT ASSAULT VEHICLE, 25MM	E0947	18.0	SLEP scheduled to occur between FY04-07
TRUCK, 5TON	D1059	22.0	Being replaced with the Medium Tactical Vehicle (MTVR)
TRUCK, HMMWV	D1158	19.0	Being replaced with the HMMWVA2
TRUCK, LVS	D0209	18.0	
<b>TRACKED COMBAT VEHICLES</b>			
ASSAULT AMPHIBIOUS VEHICLE, PERSONNEL	E0846	31.0	Being replaced with the AAV, RAMRS program will help improve fleet reliability (FY99-02), Last Service Life Extension Program (SLEP) occurred between 1982-1986. New SLEP scheduled for FY06-17.
RECOVERY VEHICLE FULL TRACK, M88	E1377	24.0	Being replaced by the M88A2 (Improved Recovery Vehicle)
TANK, COMBAT, 120MM	E1888	13.0	
<b>WEAPONS</b>			
HOWITZER, MEDIUM, TOWED 155MM	E0665	21.0	Being replaced with the Lightweight 155MM Howitzer (LW155)

**USMCR**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.  
Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>TRACKED COMBAT VEHICLES</b>				
AAV7A1 PIP	575,000	483,000	754,000	
LAV PIP	0	0	11,821,000	
MODIFICATION KITS (TRKD VEH)	57,000	701,000	2,931,000	
M1A1 FIREPOWER ENHANCEMENTS	0	0	14,145,000	
<b>ARTILLERY AND OTHER WEAPONS</b>				
HIMARS	17,954,000	16,387,000	137,294,000	
155MM LIGHTWEIGHT TOWED HOWITZER	16,723,000	25,533,000	25,296,000	
MOD KITS (ARTILLERY)	275,000	293,000	438,000	
MARINE ENHANCEMENT PROGRAM	604,000	613,000	618,000	
<b>GUIDED MISSILES</b>				
HIMARS ROCKETS	0	1,329,000	32,812,000	
PREDATOR (SRAW)	0	0	438,000	
<b>COMMAND AND CONTROL SYSTEMS</b>				
UNIT OPERATIONS CENTER	0	786,000	785,000	
MULTIPLE ROLE RADAR SYSTEM	285,000	256,000	47,000	
<b>REPAIR AND TEST EQUIPMENT</b>				
AUTO TEST EQUIP SYS	1,681,000	1,740,000	0	
GENERAL PURPOSE ELECTRONIC TEST EQUIP.	1,101,000	1,161,000	1,131,000	
<b>RADAR + EQUIPMENT (NON-TEL)</b>				
RADAR SET AN/TPS-59	860,000	989,000	1,153,000	
<b>INTELL/COMM EQUIPMENT (NON-TEL)</b>				
INTELLIGENCE SUPPORT EQUIPMENT	0	198,000	0	
MOD KITS (INTEL)	256,000	261,000	262,000	
<b>REPAIR AND TEST EQUIPMENT (NON-TEL)</b>				
GENERAL PURPOSE MECHANICAL TMDE	769,000	770,000	688,000	
<b>OTHER COMM/ELEC EQUIPMENT (NON-TEL)</b>				
NIGHT VISION EQUIPMENT	12,819,000	5,799,000	14,844,000	
<b>OTHER SUPPORT (NON-TEL)</b>				
COMMAND POST SYSTEMS	0	0	1,202,000	
RADIO SYSTEMS	0	2,374,000	0	
COMM SWITCHING & CONTROL SYSTEMS	173,000	177,000	168,000	
MOD KITS MAGTF C41	0	0	0	
AIR OPERATIONS C2 SYSTEMS	1,420,000	2,855,000	4,329,000	
INTELLIGENCE C2 SYSTEMS	596,000	257,000	3,152,000	
<b>OTHER SUPPORT</b>				
ITEMS LESS THAN \$5 MILLION	188,000	193,000	178,000	
<b>ENGINEER AND OTHER EQUIPMENT</b>				
ENVIRONMENTAL CONTROL EQUIP ASSORT	491,000	262,000	1,373,000	
BULK LIQUID EQUIPMENT	152,000	159,000	148,000	
TACTICAL FUEL SYSTEMS	740,000	755,000	768,000	
POWER EQUIPMENT ASSORTED	1,710,000	1,738,000	1,680,000	
<b>MATERIALS HANDLING EQUIPMENT</b>				
AMPHIBIOUS RAID EQUIPMENT	130,000	133,000	117,000	
MATERIAL HANDLING EQUIP	3,375,000	10,464,000	5,167,000	
<b>GENERAL PROPERTY</b>				
TRAINING DEVICES	1,324,000	1,218,000	8,071,000	
CONTAINER FAMILY	617,000	628,000	552,000	
FAMILY OF CONSTRUCTION EQUIPMENT	1,848,000	943,000	3,577,000	
<b>OTHER SUPPORT</b>				

**USMCR**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.*  
*Note: Cost figures are in dollars.*

<i><b>NOMENCLATURE</b></i>	<i><b>FY 2004</b></i>	<i><b>FY 2005</b></i>	<i><b>FY 2006</b></i>	<i><b>REMARKS</b></i>
MODIFICATION KITS	126,000	128,000	111,000	
<b>TOTAL</b>	<b>66,849,000</b>	<b>79,583,000</b>	<b>276,050,000</b>	

## National Guard and Reserve Equipment Appropriation (NGREA) Procurements

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory.*

*Note: Cost figures are in dollars.*

<i>NOMENCLATURE</i>	<i>FY 2001</i>	<i>FY 2002</i>	<i>FY 2003</i>	<i>REMARKS</i>
<b>AIRCRAFT</b>				
CH-53E HNVS B KITS	1,820,000.00	1,815,000.00		Helicopter Night Vision Systems
KC-130T CNS/ATM		250,000.00		
KC-130T COCKPIT ARMOR/LOX BOTTLE ARMOR PLATING			1,740,000	
KC-130T OIL COOLER AUGMENTATION/AIRCRAFT RETROFIT			2,000,000	
KC-130T NIGHT VISION INTERIM LIGHTING PACKAGE			862,000	
<b>COMMUNICATIONS/ELECTRONICS</b>				
RESERVE AUTOMATED SUPPORT SYSTEM (RASS)	2,155,000.00		900,000	Common End User Computer Equipment
VDC-400/500 MODEMS AND IP ROUTING BRIDGES			168,000	
<b>COMMUNICATIONS, OTHER</b>				
GCP-2A INFRARED LASER TGT MARKER	208,000.00			
MULTIPLEXOR AN/FCC-100	24,000.00			
HANDHELD RADIO EQUIPMENT (PRC-148)			814,000	
HIGH FREQUENCY MANPOWER RADIO (AN/PRC-150)			400,000	
<b>GENERAL PROPERTY</b>				
COMMERCIAL EMBARKATION BOXES		833,000.00	513,900	
QUAD CONTAINER	535,000.00	1,766,000.00	708,000	
EMBARKATION PALCON			578,000	
<b>OTHER SUPPORT</b>				
RIGID HULL INFLATABLE BOATS		265,000.00		
ALTERNATE POWER EQUIPMENT			1,018,000	
KG-175 ALTERNATE POWER EQUIPMENT			242,000	
<b>WEAPONS</b>				
SPECIAL APPLICATION SCOPED RIFLE (SASR)	216,000.00			.50 Caliber Sniper Rifle
<b>TOTAL</b>	<b>\$4,207,000</b>	<b>\$4,929,000</b>	<b>\$9,943,900</b>	

**Projected Equipment Transfer/Withdrawal Quantities**

*NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.*

**TABLE NOT APPLICABLE**

## USMCR

Table 6

## FY 2000 Planned vs Actual Procurements and Transfers

*NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002.*

*Cost figures are in dollars.*

Nomenclature	Equip No.	FY 00 Transfers		FY 00 Procurements		FY 00 NGREA	
		Planned	Actual	Planned	Actual	Planned	Actual
AAV7A1 PIP	E0846 E0856 E0796			2,000,000	4,000,000		
LAV PIP	E0940-50			264,000			
Modification Kits (Trkd Veh)					4,672,000		
Marine Enhancement Program					443,000		
Javelin	E0207			5,600,000	5,600,000		
Auto Test Equip Sys					2,200,000		
General Purpose Electronic Test Equip				1,200,000	1,200,000		
Intelligence Support Equipment	A1280			1,074,000	482,000		
Mod Kits (Intel)					261,000		
General Purpose Mechanical TMDE	C70XX				716,000		
Items Under \$5 Million (Comm & Elec)					479,000		
Common Computer Resources				549,000	549,000		
Command Post Systems	C3412				2,240,000		
Radio Systems				8,159,000	10,321,000		
Comm Switching & Control Systems				21,739,000	13,800,000		
Mod Kits MAGTF C41					388,000		
Air Operations C2 Systems				761,000	761,000		
Intelligence C2 Systems				690,000			
5/4 Ton Truck HMMWV (MYP)	D1158 D1159 D1125 D1087 D1001 D1002			13,033,000	13,033,000		
Items Less Than \$5 Million					1,402,000		
Environmental Control Equip Assort				277,000	508,000		
Tactical Fuel Systems					1,459,000		
Demolition Support Systems					371,000		
Power Equipment Assorted				420,000	420,000		
Training Devices					1,372,000		
Container Family	C4431 C4433			1,163,000	1,163,000		
F/A-18A+ (ECP 583)						17,896,000	17,896,000
Common End User Equipment						2,000,000	2,000,000
Totals:				56,929,000	67,840,000	19,896,000	19,896,000

**USMCR**  
**Major Item of Equipment Substitution List**

Table 7

*NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

**TABLE NOT APPLICABLE**



**USMCR**  
**Significant Major Item Shortages**

Table 8

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service. Cost figures reported in dollars.*

<b>PR</b>	<b>NOMENCLATURE</b>	<b>TOTAL REQ'D</b>	<b># UNITS SHORT</b>	<b>UNIT COST</b>	<b>TOTAL SHTG COST</b>	<b>RATIONALE / JUSTIFICATION</b>
1	F/A-18A+ (ECP-583)	36	10	5,200,000	52,000,000	
2	CH-53E (HNVS) AFC-471 "B" KIT	21	8	7,150,000	57,200,000	
3	INITIAL ISSUE	5	5	12,000,000	60,000,000	
4	KC-130T AVIONICS MODERNIZATION PROGRAM	28	28	5,200,000	145,600,000	
5	QUAD CONTAINER	5,516	3,502	2,006	7,025,012	
6	COMMERCIAL EMBARK BOXES	11,232	5,511	113	620,000	
7	PAL CONTAINER	14,562	12,298	927	11,400,246	
8	KC-130T ELECTRONIC FLIGHT INSTRUMENT (EFI)	14	14	50,000	700,000	
9	KC-130T COCKPIT ARMOR/ LOX BOTTLE ARMOR PLATING	12	12	145,000	1,740,000	
10	KC-130T OIL COOLER AUGMENTATION QEC/AIRCRAFT RETROFIT	42	42	47,619	2,000,000	
	<b>TOTAL (ITEMS 1-10)</b>				<b>\$338,285,258</b>	

## **Chapter 4**

### **United States Naval Reserve**

#### **I. Navy Overview**

a) Overview of Navy-wide Planning Guidance: Naval forces support National Military Strategy objectives by: projection of power from the sea; sea control and maritime supremacy; strategic deterrence; strategic sealift; and forward naval presence. Sea Power 21, the Navy's vision for the future, revolves around three core concepts: "Sea Strike", projecting offensive capability; "Sea Shield", projecting defensive capability; and "Sea Basing", projecting sovereignty. Naval strategy identifies the need for the integration of the Active (AC) and Reserve (RC) components into a seamless and cohesive Total Force capable of meeting all operational requirements in peacetime and in war.

The Naval Reserve (NR) supports the overall mission of the Navy, which is: "Be prepared to conduct prompt and sustained combat operations at sea in support of U.S. national interests." The mission of the RC, as defined by Title 10, U.S.C. is to "...provide trained units and qualified persons available for active duty in the armed forces, in time of war or national emergency and at such other times as the national security may require..."

b) Navy-wide Equipping Policy: In compliance with DOD Directive 1225.6, the Chief of Naval Operations (CNO) establishes policy for equipping the NR through promulgation of OPNAV Instruction 4423.3. Navy policy is that NR units will be equipped to accomplish all assigned missions and will have an equipment and distribution program that is balanced, responsive to mission requirements, and sustainable. The priority for distribution of new and combat serviceable equipment, with associated support and test equipment, will be given to units scheduled to be deployed/employed first. Equipment priorities for NR units will be established using the same methodology as AC units having the same mobilization mission or deployment requirements.

The Navy's overriding goal is to establish and maintain a seamless and fully integrated Total Force. Navy Resource Sponsors, as part of the Navy's resource allocation process, identify NR requirements for new equipment, upgrade of current equipment and redistribution of existing AC assets. Redistribution of equipment to meet NR requirements entails a transfer of assets from the AC to the NR.

Funding for equipping the NR is provided via the Department of the Navy's President's Budget (PRESBUD) request, direct Congressional adds to the PRESBUD and Congressional adds of National Guard and Reserve Equipment Appropriation (NGREA) funding. *Table 3* identifies the amount of procurement funding anticipated to be provided in support of the NR for FY 2004 through FY 2006. *Chart 1* lists Congressional additions provided in the last three fiscal years to support NR equipment requirements. *Table 4* identifies NGREA funding provided in support of the NR for FY 2001 through FY 2003.

*CHART 1*

**Congressional Adds to Navy Procurement Programs  
For Reserve Equipment**  
(in thousand dollars)

Source	Nomenclature	Equip No.	FY 2001	FY 2002	FY 2003	Remarks
OPN	MIUW Systems	MIUW	3,000		3,200	Upgrades MIUW Systems
APN	C-40A Aircraft	C-40A	54,600		63,000	C-40A aircraft to replace DC-9 aircraft
APN	Computer Based Training	CBT	3,000	4,500	4,300	Develop C-130T aircraft maintenance CBT
OPN	Littoral Surveillance System	LSS			14,000	2 <sup>nd</sup> LSS for the Naval Reserve
OPN	IT Continuity of Operations				1,800	Infrastructure Upgrade
	Total		60,600	4,500	86,300	

c) Navy Plan to Fill Mobilization Shortages in the Naval Reserve: Major Operation Plans (OPLAN) and Contingency Plans require NR hardware units to deploy with their own weapons platform and Table of Allowance (TOA) equipment. The required equipment is either maintained at the NR activity as both a training and mobilization asset [i.e. Naval Reserve Force (NRF) ships and aircraft squadrons], stored at major continental United States (CONUS) embarkation locations as War Reserve Materiel Stock (WRMS), pre-positioned overseas or afloat, or deferred from procurement. Storage as WRMS is typical of Civil Engineering Support Equipment and Material Handling Equipment (MHE) required to support Naval Construction Force (NCF) and Naval Expeditionary Logistics Force (NAVELSF) units upon mobilization and employment. The release, shipment, and use of WRMS are dictated by OPLAN requirements.

War Reserve Materiel (WRM) requirements are identified by Navy Component Commanders and prioritized by the CNO. WRMS is normally maintained in the supply system as “swing stocks” (able to support multiple scenarios) or pre-positioned in theater to meet specific OPLAN requirements. WRM requirements are identified, considered, and approved during the resource allocation process by Navy Component Commanders and cognizant Resource Sponsors. WRMS is available to meet both NR and AC requirements. As an example, the NCF deployed one Naval Mobile Construction Battalion TOA on each of the three Maritime Prepositioning Squadrons deployed world-wide for use by AC or NR units in support of operational requirements.

Equipment and material required by a unit that is not assigned to the unit or available from WRMS would be procured from commercial sources or redistributed from other units as required.

d) Current Navy Initiatives Affecting Naval Reserve Equipment: The Navy has several ongoing initiatives to modernize, improve, or change the operational capabilities of the NR. These initiatives include:

- The C-9 aircraft replacement program begun in 1997 with the objective of replacing the NR's 27 aging DC-9/C-9B transport aircraft with the C-40A aircraft. To date, six of the seven C-40A aircraft funded have been received. Twelve additional aircraft are funded in the FY 2004-2009 Future Years Defense Program (FYDP).
- The NR's selection to operate the new procurement C-37 executive transport aircraft. The C-37 program procurement goal is five aircraft. The first aircraft was delivered in FY 2002 and funding for one aircraft is in the FYDP in FY 2005.
- Three major NR programs to modernize/upgrade NR aircraft. The first program, Engineering Change Proposal 560, has been funded to upgrade two (24 aircraft) of three NR F/A-18A fighter squadrons to achieve compatibility with fleet F/A-18s in all aspects of the precision strike mission. The 24 F/A-18A aircraft upgrades were completed in FY 2003. The second program is to upgrade 42 NR P-3C aircraft to the Update III configuration and 28 NR P-3C aircraft to the Anti-Surface Warfare Improvement Program (AIP) configuration to mirror AC P-3C capabilities. To date, 29 aircraft are Update III configured and 2 aircraft are AIP configured. No funding is in the FYDP to support additional upgrades to NR P-3C aircraft. The third program is to upgrade 18 C-130T transport aircraft with improved avionics to make them compliant with Federal Aviation Authority/International Civil Aviation Office communication, navigation and surveillance (CNS) requirements in support of global Air Traffic Management. These upgrades will allow the NR's C-130T aircraft to operate in all global airspace. The C-130T upgrade is fully funded in the FYDP and expected to begin in FY 2005.
- Executing the Navy's Helicopter Concept of Operations plan with a goal of replacing all Navy helicopters with MH-60S and MH-60R type/model/series aircraft. The NR's total program requirement is 30 MH-60S and 10 MH-60R aircraft. To date, 8 MH-60S aircraft have been funded for the NR and 4 are in the FYDP (FY 2004). The NR's most immediate helicopter priority is to replace eight aging UH-3H aircraft with MH-60S aircraft. This replacement is scheduled to occur in FY 2007-2008 with the delivery of the 8 previously funded aircraft.
- Modernization of the Mobile Inshore Undersea Warfare (MIUW) units' surveillance systems continued with the last upgraded system delivered in FY 2003. In FY 2002, \$24M in supplemental funding was appropriated and provided to procure 36 additional small boats for the 14 Inshore Boat Units (IBU) of the NR. The additional boats support the increase of the allowance for boats from 2 to 6 for each IBU.
- NCF development and execution of a plan to modernize, upgrade and, recapitalize NCF equipment TOAs.

e) Navy Plan to Achieve Full Compatibility between Active and Reserve Components: The Navy will continue to manage Total Force equipment inventories to provide the most capable systems to meet mission requirements and minimize the effects of equipment shortfalls and incompatibility. The Navy stresses interoperability as part of the Total Force concept and

makes no distinction between the AC and the NR. Equipment acquisition and upgrade programs and equipment redistribution from the AC have reduced problems in the areas of NR equipment compatibility and capability with both the AC and joint forces.

The Navy will continue the strategy of cascading equipment from the AC to the NR, funding new equipment and modernization requirements during its resource allocation process, and executing funding provided by Congress to modernize NR equipment. It is expected that requirements will continue to exceed resources available, requiring the Navy to continue to balance resources with requirements to get the optimum mix of equipment for the Total Force.

## II. Naval Reserve Overview

### a) Current Status of the Naval Reserve

(1) General Overview: The NR consists of hardware units and augmentation units. For hardware units, equipment availability has a direct impact on unit training, unit readiness, and their ability to perform assigned missions. NR augmentation units provide trained personnel to supplement the manning of AC gaining commands. Augmentation unit mobilization equipment is assigned to the AC gaining command.

Hardware units, which are commissioned, maintain or have in WRMS organic equipment allowances similar to AC units and are capable of independent deployment. Hardware units are heavily dependent on the availability and readiness of assigned equipment. Systems Commands, i.e. Naval Supply Systems Command, Naval Facilities Engineering Command, Naval Air Systems Command, and Naval Sea Systems Command, act as project managers to establish equipment allowances for designated NR hardware units to support operational requirements.

NR hardware units consist of 23 ships and 237 aircraft, as well as 20 NCF, 14 NAVELSF, 45 Naval Coastal Warfare (NCW) and 4 Explosive Ordnance Disposal (EOD) units. All NR Force ships, NCF, NCW, and EOD units are under the operational control of Commander, Pacific Fleet (COMPACFLT) or Commander, Atlantic Fleet (COMLANTFLT). NAVELSF units and NR aircraft squadrons are under the operational control of Commander, Naval Reserve Force.

(a) Naval Reserve Aviation: The Naval Air Reserve consists of four air wings: Commander, Helicopter Wing Reserve; Commander, Fleet Logistics Support Wing; Commander, Reserve Patrol Wing; and Commander, Carrier Air Wing Reserve Twenty (CVWR-20). The NR possesses 100% of the Navy's organic medium and heavy airlift and adversary training capability, 37% of the Navy's maritime patrol capability, 9% of the carrier air wings, and 12% of the Navy's rotary wing capability.

1. Reserve Carrier Airwing: The NR provides one of the Navy's eleven Carrier Air Wings. The wing (CVWR-20) is comprised of eight squadrons, (4) F/A-18A/B, (1) EA-6B, (2) E-2C, and (1) F-5E/F. CVWR-20's EA-6B Squadron has been mobilized three times since 1995 in support of Operations DENY FLIGHT and ALLIED FORCE. It deploys annually in support of Operations SOUTHERN WATCH and NORTHERN WATCH to patrol the no-fly zones over Iraq. These aircraft have flown thousands of hours of combat missions in support of these real world operations. In FY 2002, CVWR-20 embarked onboard the USS NIMITZ (CVN 68) for a 54-day transit from Norfolk, VA, around South America in support of the ship's homeport change to San Diego, CA. In addition to CVWR-20's operational requirements, its squadrons are engaged in vast amounts of peacetime contributory support to the AC. CVWR-20 provides nearly all of the Navy's adversary mission capability, and 68% of the Navy E-2C counter-narcotic flight support, while



F/A 18A Hornet Fighter Aircraft

participating regularly in fleet exercises. The NR is planning to upgrade three F/A-18A squadrons (36 aircraft) with more modern software and avionics capability to improve tactical and logistical compatibility with AC aircraft. Twenty-four upgraded F/A-18 aircraft have been delivered to date. One F/A-18 squadron upgrade remains unfunded (see *Table 8*), however, this squadron (VFA-203) is slated for decommissioning in FY 2004. Airframe structural repairs of thirty-six NR and USMCR adversary F-5E/F aircraft were programmed for funding (see *Table 3*) beginning in FY 2001. To date 20 aircraft have been repaired. VAW-78 (one of two E-2C aircraft squadrons in the NR) is slated for decommissioning in FY 2005.



P-3C Orion Surveillance Aircraft

2. Reserve Maritime Patrol Aviation: The NR provides 37% of the Navy's Maritime Patrol capability. The NR has seven P-3 Squadrons each with an aircraft allowance of six. All NR P-3 squadrons report to a single Patrol Wing Commander. Of the 40 P-3 aircraft required by the geographic Unified Commanders to be forward deployed, three are provided by the NR. In FY 2003, the NR completed the installation of eight P-3 Update III modification kits procured with NGREA funding bringing to 29 the number of NR P-3C aircraft in an update III configuration. During FY 2003, the NR received two state of the art AIP aircraft. In FY 2005, three of the seven NR P-3 Squadrons are scheduled to transition to augment units with four aircraft assigned to each, and in FY 2006 two squadrons are slated for decommissioning.

3. Fleet Air Logistics: The NR provides all of the Navy's organic intra-theater medium and heavy airlift capability. This airlift provides direct logistics support for Fleet Commanders worldwide and airlift support to all military departments within the CONUS. The NR's Fleet Logistics Support Wing consists of 14 squadrons operating C-40, C-9, C-20, C-37, and C-130 aircraft. The NR's C-9 aircraft average over 28 years in age and require substantial avionics upgrades and engine replacement to meet globally mandated noise abatement and navigation requirements. A significant modernization initiative for NR airlift capabilities was initiated in FY 1997 when \$120M was provided through NGREA for procurement of two C-40A (C-9 replacement) aircraft. The modernization program was continued in FY 1998 and FY 1999 with NGREA funding one additional C-40A aircraft each fiscal year. The fifth C-40A aircraft for the NR was funded in the Navy's FY 2000 PRESBUD request, the sixth aircraft by a Congressional addition to the FY 2001 budget and the seventh by a Congressional addition to the FY 2003 budget. Twelve additional aircraft are in the FYDP (FY 2004 - 2009). Six C-40As have been accepted by the NR thus far and are being operated by VR-59 at Naval Air Station, Fort Worth, TX, and VR-58 at Naval Air Station, Jacksonville, FL. In FY 2004, funding is programmed to support the installation of avionics upgrades to all 18 NR C-130T cargo planes. This upgrade will make the aircraft compliant with CNS requirements to fly in all global airspace.



C-40A Clipper Transport Aircraft



4. Reserve Helicopter Wing: The NR provides five helicopter squadrons to the Navy's rotary wing fleet. In addition, the NR provides personnel and equipment (7 MH-53E helicopters) in support of two composite (RC and AC) Airborne Mine Countermeasures (AMCM) squadrons. This represents 12% of the Navy's total helicopter inventory, as well as all of the Navy's Helicopter Combat Support Special Squadrons and 35% of the AMCM assets. The squadrons perform a variety of missions including search and rescue, logistics support, anti-submarine warfare, AMCM and counter-narcotics operations. The NR helicopter inventory consists of the HH-60H, SH-60B, SH-60F, UH-3H and MH-53E aircraft. The NR is affected by the implementation of the Navy's Concept of Operations Plan which will eventually transition all helicopter squadrons in the Navy to the Sikorsky H-60 helicopter series. The NR's most immediate helicopter priority is to replace eight aging UH-3H aircraft with MH-60S aircraft. This replacement is scheduled to occur in FY 2007-2008. During FY 2001, the NR commissioned one Helicopter Anti-submarine Light Squadron (HSL-60). Six SH-60B aircraft were redistributed from the AC to the NR in FY 2001-2003 to complete the stand-up of HSL-60 in Mayport, FL.



SH-60B Seahawk Helicopter

(b) Naval Surface Reserve Force

1. Naval Reserve Force (NRF) Ships: The NRF consists of twenty-three ships with homeports in four locations throughout the United States. NRF ships regularly deploy to support the Navy's operational requirements and relieve the operational tempo of AC ships. The NRF ships continue to be a vital part of the Navy, participating in numerous fleet operations and exercises such as UNITAS, RIMPAC 2002, CARAT 02, KERNAL BLITZ, COBRA GOLD and Caribbean counter-narcotic operations. Several NRF FFGs were deployed in support of Operations ENDURING FREEDOM and NOBLE EAGLE. These ships are a significant operational asset as well as important training platforms for Naval Reservists.

The NR surface combatant force consists of eight OLIVER HAZARD PERRY Class Frigates (FFG). In FY 2003, the NR received three Flight III (SH-60B capable) Class FFGs replacing three older Flight I ships. The Navy is planning to add one FFG to the NR in FY 2004.

The NR comprises approximately 60% of the Navy's surface ship mine warfare capabilities. The total number of NR Mine Warfare ships is 15: ten MHCs; and five MCMs. All are home-ported in Ingleside, TX.



USS CURTS (FFG 38)

2. Naval Coastal Warfare (NCW): The NCW organization consists of 22 MIUW units, 14 IBU, and 9 Harbor Defense Command (HDC) units [possessing Mobile Ashore Support Terminal (MAST) equipment]. From FY 1997 through FY 2001, over \$150M of Other





**Inshore Boat Unit 17 Small Boat**

Procurement Navy (OPN) and NGREA funding was provided by Congress to upgrade the equipment and capabilities of the NCW organization.

Specializing in coastal surveillance, NCW units provide surface and sub-surface surveillance of inshore areas including ports and harbors, tactical theater level command and control, and small boat capability to support operations by U.S. Naval forces. NCW units provide all of the Navy's capability for shallow water surveillance and detection of surface craft, subsurface craft, and swimmer threats. Operational control of all

NCW units transferred from Commander, Naval Surface Reserve Force to PACCOM and LANTCOM in FY 1999.

The MIUW units have fully upgraded all of 22 Radar Sonar Surveillance Center suites. The final five upgrades were installed using High Mobility, Multi-Purpose Wheeled Vehicle configuration vice a van configuration, making the units more mobile and easier to task-organize to meet diverse operational requirements. MIUW units are in high demand by Unified and Naval Component Commanders to support critical in-theater force protection and coastal surveillance exercises and operational requirements.

Following the terrorist attack on the USS COLE, several NCW units were recalled to active duty to provide in-theater force protection in the U.S. Central Command area of responsibility. Since the September 11<sup>th</sup> attack, the demand for NCW units has increased dramatically. Immediately after the attack, over one-third of the 4,000 person NCW force was mobilized and deployed to provide force protection and coastal surveillance in support of Naval Commanders throughout the world. The AC, realizing the importance of the NCW units' missions and functions, started the process to stand up active component units with similar capabilities in FY 2002.

In FY 1998, NCW forces were selected to operate the Navy's initial Littoral Surveillance System (LSS). LSS integrates data from overhead tactical sensors, including aircraft and unmanned aerial vehicles, with MIUW close-in surface waterborne surveillance and shallow underwater surveillance sensor data to provide real-time, integrated surveillance and targeting in support of forces ashore and land attack capable ships. To date, one LSS has been funded and received. In FY 2003, the initial LSS will be transferred to Whiteman, Air Force Base, MO, and will be operated by MIUW 114 personnel. In FY 2003, a congressional add of \$14M was provided to procure a second LSS.

**3. Naval Construction Force (NCF):** The Reserve NCF provides 66% of the Navy's combat construction capabilities in support of Unified and Navy Component Commander operational requirements.

Under the operational control of COMPACFLT and COMLANTFLT, the reserve portion of the NCF consists of four Naval Construction Regiments (NCR), 12 Naval Mobile Construction Battalions (NMCB), two Construction Battalion Maintenance Units (CBMU), and two Naval Construction Force Support Units. Immediately following the September 11<sup>th</sup> attack, over 700 personnel from CBMU 303 and other Reserve NCF units were mobilized and deployed

to Camp Rhino and Kandahar Airport in Afghanistan and to other locations throughout the world to perform construction and force protection projects. In addition to their mobilization mission, NCF units provide peacetime contributory support to reduce the backlog of real property maintenance and perform construction projects at Naval activities world-wide.



**NMCB 15 Naval Reservist at work**

The reserve units of the NCF have equipment shortfalls in their deployment TOA pack-ups held in WRMS. Equipment shortfalls include tactical vehicles, other civil engineering support equipment, and communications gear. Significant funding increases beginning in FY 2002 have placed the NCF on track to eliminate these shortfalls over the next 10 years. In addition to the NCF's long range equipping plan for their Reserve units, one NCR and three reserve NMCB are scheduled for decommissioning in FY 2004.

4. Naval Expeditionary Logistics Support Force (NAVELSF): NAVELSF units constitute over 90% of the Navy's expeditionary logistics support capabilities. NAVELSF units provide a wide range of logistics capabilities to include: ship loading and discharge; operation of air cargo terminals and freight forwarding terminals; warehouse operation; and mobile mail centers. To maintain their skills during peacetime, cargo handlers carry out Fleet Hospital Support Program ship offloads and backloads, provide contributory support to Naval logistics commanders in the European-, Pacific- and Central Command areas of responsibility. They also occasionally augment the Navy's active duty cargo handlers during Maritime Preposition Force operations and exercises. NAVELSF equipment (civil engineering support equipment, material handling equipment, and communications gear) held by units and in WRMS is serviceable, but requires some modernization.

Immediately following the September 11<sup>th</sup> attack, over sixty personnel from NAVELSF units were mobilized and deployed to Bahrain in direct support of OEF/ONE. These personnel augmented Commander, Task Force 53, and are currently performing cargo handling and air terminal operations in support of afloat and ashore operating units in the Arabian Gulf region.

5. Explosive Ordnance Disposal (EOD): Under the operational control of COMPACFLT and COMLANTFLT, reserve EOD forces comprise four of the ten EOD Mobile Units in the Navy. EOD units provide combat ready forces to: eliminate ordnance hazards; clear harbors and approaches of obstacles; and salvage/recover ships, aircraft and weapons lost or damaged in peacetime or combat in support of the National Military Strategy.

## (2) Status of Equipment

(a) Equipment On Hand: *Table 1* provides NR major equipment inventories on-hand and requirements to meet assigned missions.

(b) Average Age of Major Items of Equipment: As in the AC, the NR possesses equipment requiring replacement, and modernization. *Table 2* provides the average age of major equipment in the NR inventory.

(c) Compatibility of Current Equipment with the AC: Achieving equipment compatibility and equivalent capability with the AC is one of the Director, Naval Reserve's highest priorities and is reflected in the NR unfunded equipment priority list (see *Table 8*). Navy procurement and upgrade programs, redistribution of equipment from the AC, and congressionally added funding have improved equipment capability/compatibility for the NR.

Some NR aircraft do not have the most recent upgrades installed, which creates a large unfunded requirement for aircraft modernization. Examples of NR aircraft with reduced capability as compared to the AC are the F/A-18A (incompatible aircraft scheduled to be decommissioned during FY 2004) and the P-3C aircraft. The F/A-18 aircraft lack the capability to deliver precision guided munitions. Two of the three F/A-18 squadrons requiring the precision guided munitions delivery capability have been upgraded. Approximately 30% of the NR's P-3C aircraft require Update III modification and 26 require installation of the AIP upgrade.

For the NCF, sustainability and interoperability with other services/units with whom they operate are major challenges. NCF units operate commercial vehicles that lack the all-terrain capability, survivability, and longevity of the tactical vehicles used by other services. In addition, 30% of all NCF construction equipment is beyond its normal life expectancy. With the age of NCF equipment, parts support and maintainability are also becoming more difficult.

(d) Maintenance Issues: The NR shares the same readiness and maintenance challenges as the AC. Beginning in FY 1998, the Navy began to better fund maintenance requirements. Since FY 2000, the Chief of Naval Operations placed an even higher focus on maintenance funding by making near term readiness a top priority for the Navy. This focus resulted in an improved maintenance funding profile for the NR.

(e) Modernization Programs and Shortfalls: As with the AC, the NR has a considerable list of unfunded equipment replacement and modernization requirements. Each year, the Director, Naval Reserve develops an unfunded equipment requirement list and forwards it for resourcing consideration. The NR's highest priority unfunded equipment requirements are contained in *Table 8*.

b) Changes Since Last NGRER: In FY 2003, Congress added \$63M to the budget for the procurement of one C-40A transport aircraft. This was the seventh aircraft funded in support of the program goal of 27 aircraft. The FY 2003 National Guard and Reserve Equipment Appropriation provided \$10M for miscellaneous equipment.

As part of the FY 2004-2009 FYDP, the Navy plans to decommission several NR aircraft squadrons and other hardware units. The units decommissioning include VFA-203, 7<sup>th</sup> NCR, NMCB 15, 27 and 28 in FY 2004, VAW-78 in FY 2005, and VP-65 and VP-94 in FY 2006. Also, VP-62, 69, and 92 will transition to augment units of active VP squadrons in FY 2005.

c) Future Years Program (FY 2004-FY 2006)

(1) FY 2006 Equipment Requirements: *Table 1* provides projected FY 2006 major equipment inventories and requirements. The replacement of the C-9A and DC-9 aircraft with C-40A aircraft continues to be the top equipment priority for the NR. *Table 7* provides a list of equipment substitutes within the NR.

(2) Anticipated New Equipment Procurements: Major equipment anticipated to be procured for the NR include four MH-60S and one C-40A aircraft in FY 2004, one C-40A aircraft and one C-37A aircraft in FY 2005 and one C-40A aircraft in FY 2006. *Table 6* compares NR planned versus actual equipment procurements for FY 2000.

(3) Equipment Transfers to the Naval Reserve: *Table 5* provides anticipated major equipment transfers from the AC to the NR.

(4) Anticipated Withdrawals from Naval Reserve Inventory: *Table 5* provides major equipment to be decommissioned within the NR.

(5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2006: *Tables 1* and *8* provide equipment inventories, shortfalls and modernization requirements of the NR.

d) Summary/Conclusion: As the Navy strives to seamlessly integrate the NR with the AC into a cohesive Total Force capable of meeting all operational requirements in peacetime and in war, NR equipment requirements will continue to be addressed through a combination of equipment redistribution from the AC, procurement of new equipment, and modernization of equipment held in the NR inventory. With diminishing NGREA funds, the NR is more reliant on the Navy's resource allocation process to meet equipment replacement and modernization requirements.

The NR, as well as the AC, continues to face the problem of procurement requirements far exceeding resources available. The top equipment priorities for the NR are procurement of the C-40A aircraft to replace twenty-seven aged DC-9 and C-9A aircraft, upgrade of the P-3C and F/A-18A aircraft and procurement of equipment for NR expeditionary units. As in the past, the Navy will continue to balance resources to best equip the AC and the NR to support mission requirements.

# Consolidated Major Item Inventory and Requirements

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>Beginning FY 2004 COST</b>	<b>Beginning FY 2004 QTY O/H</b>	<b>Beginning FY 2005 QTY O/H</b>	<b>Beginning FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY REQ</b>
<b>AIRCRAFT</b>							
AIRCRAFT, TRANSPORT (SKYTRAIN)	C-9B	27,507,000	15	15	15	15	15
AIRCRAFT, TRANSPORT (SKYTRAIN)	DC-9	18,136,000	6	4	3	2	2
AIRCRAFT, TRANSPORT (BOEING 737-700)	C-40A	54,500,000	6	8	9	10	10
AIRCRAFT, TRANSPORT (HERCULES)	C-130T	34,514,000	18	18	18	18	18
AIRCRAFT, TRANSPORT (GULFSTREAM)	C-20D	31,595,000	2	2	2	2	2
AIRCRAFT, TRANSPORT (GULFSTREAM)	C-20G	38,559,000	4	4	4	4	4
AIRCRAFT, TRANSPORT (GULFSTREAM)	C-37	49,800,000	1	1	2	2	2
AIRCRAFT, TRANSPORT (KINGAIR)	UC-12B	3,509,000	6	6	6	6	6
AIRCRAFT, PATROL, P-3C (ORION)	P-3C	57,305,000	42	42	36	24	24
AIRCRAFT, EARLY WARNING (HAWKEYE)	E-2C	79,333,000	8	8	4	4	4
AIRCRAFT, EARLY WARNING (PROWLER)	EA-6B	64,143,000	4	4	4	4	4
AIRCRAFT, FIGHTER/ATTACK, F/A-18A (HORNET)	F/A-18A	43,296,000	48	36	36	36	36
AIRCRAFT, FIGHTER/ATTACK, F/A-18B (HORNET)	F/A-18B	43,296,000	3	3	3	2	2
AIRCRAFT, FIGHTER, F-5E (FREEDOM FIGHTER)	F-5E	8,081,000	20	20	20	19	19
AIRCRAFT, FIGHTER, F-5F (FREEDOM FIGHTER)	F-5F	11,834,000	3	3	3	3	3
HELICOPTER, COMBAT (SEAHAWK)	MH-60S	15,245,000	0	0	0	4	4
HELICOPTER, COMBAT SAR (SEAHAWK)	HH-60H	18,835,000	16	16	16	16	16
HELICOPTER, COMBAT SAR (SEAHAWK)	UH-3H	9,673,000	9	8	8	4	4
HELICOPTER, MINESWAR, (SEA DRAGON)	MH-53E	32,409,000	7	7	7	7	8
HELICOPTER, ASW, FRIGATE (SEAHAWK)	SH-60B	28,122,000	6	6	6	6	6
HELICOPTER, ASW, CARRIER (SEAHAWK)	SH-60F	20,166,000	6	6	6	6	6
<b>SHIPS</b>							
FRIGATE, GUIDED MISSILE (PERRY CLASS) FLIGHT III	FFG	322,887,952	8	9	9	9	9
SHIP, MINE COUNTERMEASURES (AVENGER CLASS)	MCM	154,193,429	5	5	5	5	5
SHIP, MINE HUNTER, COASTAL (OSPREY CLASS)	MHC	150,528,605	10	10	10	10	10
<b>NAVAL COASTAL WARFARE FORCES</b>							
MIUW SURVEILLANCE SYSTEM	AN/TSQ-108ASU	5,200,000	22	22	22	22	22
BOAT, INSHORE	IBU	360,000	64	84	84	84	84
LITTORAL SURVEILLANCE SYSTEM	LSS	26,000,000	1	2	2	2	2
MOBILE ASHORE SUPPORT TERMINAL	MAST	2,300,000	6	9	11	11	11
<b>RESERVE NAVAL CONSTRUCTION FORCES</b>							
NAVAL CONSTRUCTION REGIMENT TOA	NCR	2,200,000	3	3	3	3	3
CONSTRUCTION BATTALION MAINTENANCE UNIT TOA	CBMU	11,000,000	1	2	2	2	2
NAVAL CONSTRUCTION FORCE SUPPORT UNIT TOA	NCFSU	47,000,000	1	2	2	2	2

**Consolidated Major Item Inventory and Requirements**

<i>NOMENCLATURE</i>	<i>EQUIP No.</i>	<i>Beginning FY 2004 COST</i>	<i>Beginning FY 2004 QTY O/H</i>	<i>Beginning FY 2005 QTY O/H</i>	<i>Beginning FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY O/H</i>	<i>Ending FY 2006 QTY REQ</i>
NAVAL MOBILE CONSTRUCTION BATTALION TOA	NMCB	39,000,000	7	9	9	9	9
<b>RESERVE NAVAL EXPLOSIVE ORDNANCE DISPOSAL FORCES</b>							
NAVAL RESERVE FORCE EOD MOBILE UNITS TOA	NRFMU	3,734,197	4	4	4	4	4
<b>NAVAL EXPEDITIONARY LOGISTICS SUPPORT FORCES</b>							
MATERIAL HANDLING EQUIPMENT ITEMS	NAVELSF	16,622,500	300	300	300	247	247
CIVIL ENGINEERING SUPPORT EQUIPMENT ITEMS	NAVELSF	6,609,900	278	278	278	487	487

**USNR**  
**Average Age of Equipment**

Table 2

<i><b>NOMENCLATURE</b></i>	<i><b>EQUIP No.</b></i>	<i><b>AVERAGE AGE</b></i>	<i><b>REMARKS</b></i>
<b>AIRCRAFT</b>			
AIRCRAFT, TRANSPORT (SKYTRAIN)	C-9B	28	
AIRCRAFT, TRANSPORT (SKYTRAIN)	DC-9	33	
AIRCRAFT, TRANSPORT (BOEING 737-700)	C-40A	2	
AIRCRAFT, TRANSPORT (HERCULES)	C-130T	9	
AIRCRAFT, TRANSPORT (GULFSTREAM)	C-20D	16	
AIRCRAFT, TRANSPORT (GULFSTREAM)	C-20G	9	
AIRCRAFT, TRANSPORT (KINGAIR)	UC-12B	23	
AIRCRAFT, TRANSPORT ( GULFSTREAM)	C-37	1	
AIRCRAFT, PATROL, P-3C (ORION)	P-3C	23	
AIRCRAFT, EARLY WARNING (HAWKEYE)	E-2C	19	
AIRCRAFT, EARLY WARNING (PROWLER)	EA-6B	27	
AIRCRAFT, FIGHTER/ATTACK, F/A-18A (HORNET)	F/A-18	18	Includes F/A-18A and F/A-18B aircraft
AIRCRAFT, FIGHTER, F-5E (FREEDOM FIGHTER)	F-5	29	Includes F-5E and F-5F aircraft
HELICOPTER, COMBAT SEARCH/RESCUE (SEAHAWK)	HH-60H	12	
HELICOPTER, COMBAT,SAR	UH-3H	41	
HELICOPTER, MINEWAR, MH-53E (SUPER STALLION)	MH-53E	9	
HELICOPTER, ASW, (SEAHAWK)	SH-60F	13	
HELICOPTER, ASW, (SEAHAWK)	SH-60B	19	
<b>SHIPS</b>			
FRIGATE,GUIDED MISSILE (PERRY CLASS) FLIGHT III	FFG	22	
SHIP,MINE COUNTERMEASURES (AVENGER CLASS)	MCM	14	
SHIP,MINE HUNTER,COASTAL (OSPREY CLASS)	MHC	8	

**USNR**  
**Service Planned Procurements (P-1R Data)**

Table 3

<p><i>NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included</i></p> <p><i>Note: Cost figures are in dollars.</i></p>				
<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>AIRLIFT AIRCRAFT</b>				
C-40A	63,952,000	65,415,000	67,953,000	
<b>MODIFICATION OF AIRCRAFT</b>				
F-5 SERIES	2,649,000	2,200,000	240,000	
H-46 SERIES	233,000	238,000	250,000	
H-53 SERIES	6,619,000	6,748,000	6,909,000	
C-130 SERIES	2,559,000	11,315,000	20,523,000	
CARGO/TRANSPORT A/C SERIES	4,218,000	915,000	15,068,000	
<b>OCEAN ENGINEERING</b>				
DIVING AND SALVAGE EQUIPMENT	123,000	124,000	129,000	
<b>CIVIL ENGINEERING SUPPORT EQUIPMENT</b>				
GENERAL PURPOSE TRUCKS	268,000	34,000	0	
CONSTRUCTION & MAINTENANCE EQUIP	345,000	30,000	169,000	
FIRE FIGHTING EQUIPMENT	817,000	839,000	413,000	
TACTICAL VEHICLES	8,475,000	11,808,000	10,871,000	
ITEMS UNDER \$5 MILLION	2,277,000	993,000	1,112,000	
<b>SUPPLY SUPPORT EQUIPMENT</b>				
MATERIALS HANDLING EQUIPMENT	1,328,000	1,307,000	1,334,000	
<b>COMMAND SUPPORT EQUIPMENT</b>				
MOBILE SENSOR PLATFORM	35,899,000	36,250,000	11,384,000	
<b>TOTAL</b>	<b>129,762,000</b>	<b>138,216,000</b>	<b>136,355,000</b>	



## Table 4

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory . Note: Cost figures are in dollars.

USNR-4-1

## Projected Equipment Transfer/Withdrawal Quantities

*NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and disestablishing/decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>FY 2004 QTY</b>	<b>FY 2005 QTY</b>	<b>FY 2006 QTY</b>	<b>REMARKS</b>
<b>AIRCRAFT</b>					
AIRCRAFT, TRANSPORT (SKYTRAIN)	DC-9	(2)	(1)	(1)	Replaced by C-40A aircraft
AIRCRAFT, FIGHTER /ATTACK	F-18A	(12)			Disestablish VFA-203
AIRCRAFT, EARLY WARNING	E-2C		(4)		Disestablish VAW-78
AIRCRAFT, PATROL	P-3C		(18)		VP-62, 69, 92 to be Augment Unit
AIRCRAFT, PATROL	P-3C			(12)	Disestablish VP-65, 94
<b>SHIPS</b>					
FRIGATE, GUIDED MISSILE (PERRY CLASS)	FFG	1			Adding USS CROMMELIN (FFG 37)

## FY 2000 Planned vs Actual Procurements and Transfers

*NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002. Cost figures are in dollars.*

<i>Nomenclature</i>	<i>Equip No.</i>	<i>FY 00 Transfers Planned    Actual</i>		<i>FY 00 Procurements Planned    Actual</i>		<i>FY 00 NGREA Planned    Actual</i>	
<b>AIRCRAFT</b>							
C-40A				49,029,000	49,029,000		
<b>AIRCRAFT MODS</b>							
F-18 Series MODS				7,057,000	7,057,000		
H-46 Series MODS				545,000	543,000		
H-53 Series MODS				192,000	191,000		
H-1 Series MODS (USMCR)				504,000	503,000		
H-3 Series MODS				45,000	45,000		
P-3 Series MODS				500,000	500,000		
C-130 Series MODS				2,690,000	2,683,000		
Cargo/Transport A/C Series MODS				13,570,000	15,125,000		
C-9 Transport Aircraft Upgrades						3,580,000	3,580,000
<b>SHIPS</b>							
Ship, Mine Hunter, Coastal (OSPREY Class)	MHC	1	1				
<b>OTHER PROCUREMENT, NAVY</b>							
Diving And Salvage Equipment				108,000	106,000		
Passive Sonobuoys (Non-beam Forming)				2,025,000	2,011,000		
AN/SSQ-62 (DICASS)				1,129,000	1,126,000		
Miscellaneous Sonobuoys Less Than \$5 Million				52,000	52,000		
General Purpose Trucks				253,000	252,000		
Construction & Maintenance Equip				117,000	117,000		
Items Under \$5 Million				102,000	102,000		
Materials Handling Equipment				19,000	19,000		
Naval Coastal Warfare/Expeditionary Warfare Forces						7,000,000	7,000,000
EA-6B USQ-113 Pods and Band Receivers						2,500,000	2,500,000
P-3 ESM (14B40) Trainer Upgrade						920,000	920,000
Information Technology Infrastructure						5,896,000	5,896,000
Totals:				77,937,000	79,461,000	3,580,000	3,580,000

**Major Item of Equipment Substitution List**

*NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

<b>REQUIRED ITEM NOMENCLATURE</b>	<b>REQUIRED ITEM EQUIPMENT #</b>	<b>SUBSTITUTE ITEM NOMENCLATURE</b>	<b>SUBSTITUTE ITEM EQUIP #</b>	<b>FY 2004 QTY</b>	<b>DEPLOYABLE YES NO</b>	
<b>AIRCRAFT</b>						
HELICOPTER, ASW	MH-60R	HELICOPTER, ASW	SH-60B	6	X	
HELICOPTER, ASW	MH-60R	HELICOPTER, ASW	SH-60F	6	X	
HELICOPTER, COMBAT	MH-60S	HELICOPTER, COMBAT SAR	UH-3H	9	X	
HELICOPTER, COMBAT	MH-60S	HELICOPTER, COMBAT SAR	HH-60H	16	X	
AIRCRAFT, TRANSPORT	C-40A	AIRCRAFT, TRANSPORT	C-9B	15	X	
AIRCRAFT, TRANSPORT	C-40A	AIRCRAFT, TRANSPORT	DC-9	6	X	

**USNR**  
**Significant Major Item Shortages**

Table 8

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service.  
Cost figures reported in dollars.*

<b>PR</b>	<b>NOMENCLATURE</b>	<b>TOTAL REQ'D</b>	<b># UNITS SHORT</b>	<b>UNIT COST</b>	<b>TOTAL SHTG COST</b>	<b>RATIONALE / JUSTIFICATION</b>
1	C-40A TRANSPORT AIRCRAFT	27	8	64,600,000	516,800,000	Replace Aging DC-9 and C-9B Aircraft *
2	INDIVIDUAL PROTECTIVE EQUIPMENT	40000	30000	1,000	30,000,000	Outfit Deploying USNR Personnel with CBR Gear
3	P-3C AIRCRAFT BMUP KITS	42	13	9,000,000	117,000,000	Improve Capability Commensurate with AC
4	P-3C AIRCRAFT AIP KITS	28	12	14,400,000	172,800,000	Improve Capability Commensurate with AC
5	NAVAL COASTAL WARFARE BOATS AND EQUIPMENT	N/A	N/A	N/A	45,000,000	Outfit Unit Table of Allowance Requirements
6	F/A-18 AIRCRAFT MODIFICATION (ECP-560)	12	12	3,500,000	42,000,000	Provides Precision Guided Munitions Capability
7	F/A-18 AIRCRAFT MODIFICATION (ADVANCED TAGETING FLIR)	16	16	2,437,500	39,000,000	Provides Precision Guided Munitions Capability
8	F-5 AIRCRAFT RADAR UPGRADE	36	36	360,000	12,960,000	Upgrade to Better Simulate Enemy Aircraft **
9	P-3C COUNTER DRUG UPGRADE	13	13	1,500,000	19,500,000	Provides Day and Night Electro-Optic Capability
10	SH-60B HELICOPTER FLIR KITS	6	5	1,400,000	7,000,000	Improve Surveillance Capability
	<b>TOTAL:</b>				<b>\$1,002,060,000</b>	

\* Item 1 reflects units short within the FYDP (FY 04-09). Total C-40A aircraft required is 27: 7 are funded (FY 97-03); 12 are programmed in the FY 04-09 FYDP; funding/programming required for 8 C-40A aircraft.

\*\* Item 8 includes USMCR aircraft. # Units short column reflects requirements through FY 2009.

## Chapter 5 United States Air Reserve Components

### I. United States Air Force Overview

a) Overall Air Force Planning Guidance: To achieve the United States National Security Objectives, the Joint Chiefs of Staff developed a broad strategy, documented in the *Joint Vision 2020*. Based on the joint strategies laid out in *Joint Vision 2020*, the Air Force (AF) developed its guidance in *America's Air Force Vision 2020* to prescribe an understanding of what air and space power mean to the nation. This vision reiterates the Total Force commitment of "Active, Guard, Reserve...seamless in providing aerospace power". The Air Reserve Component (ARC), comprised of Air National Guard (ANG) and Air Force Reserve (AFR) units, supports this "Total Force" policy. The roles and missions of the ARC are mirror images of the Active Air Force. Since August 1998, to provide better integration of forces and as a response to changing world security, the AF has adopted the Expeditionary Air Force (EAF) concept. The EAF has organizationally linked geographically separated units into standing Aerospace Expeditionary Forces (AEF). These AEF units operate from AF installations and are ready to fight, provide airlift, air refueling, and combat support elements on very short notice.

The EAF provides a full spectrum of capabilities that can be tailored to meet the requirements of the geographic Combatant Commanders (CC).

The following table provides a brief synopsis highlighting contributions by the ARC to the AF Total Force Team while supporting contingency and peacetime operations in FY 2003:

#### **Air Force Reserve Component Provides**

Weather Reconnaissance	100%
DOD Airborne Fire Fighting Support to the U.S. Forest Service	100%
Aerial Spraying	100%
Strategic Interceptor Force	100%
Air Control and Warning	100%
Joint STARS *	100%
Aeromedical Evacuation	90%
Tactical Airlift	58%
Air Refueling Tankers	54%
Strategic Airlift	58%
Combat Search and Rescue	50%
Combat Fighters	39%
Bombers	8%
Space Operations	8%

\* Blended ANG/AF Wing structure.

b) Air Force Equipping Policy: The National Defense Authorization Act for Fiscal Year 2000 directed the services to "conduct a comprehensive examination... of the national defense strategy, force structure, force modernization plans, infrastructure, budget plan, and other elements of the defense program and policies of the United States...". This examination is

known as the Quadrennial Defense Review (QDR). The QDR has shifted the basic model for defense planning from threat-based to capabilities-based. The QDR will be accomplished every four years and project capability requirements 20 years into the future. The results of the QDR lay the foundation for the USAF equipping policy.

The ARC can be equipped in several ways:

- The Air Force plans, programs, and budgets for the procurement, transfer and modification of ARC weapon systems through the Air Force Corporate Structure.
- Congress authorizes and appropriates funding for the Air Force to fulfill specific ARC requirements.
- A single year procurement appropriation authorized by Congress for the National Guard & Reserve Equipment Appropriation (NGREA) (Appropriation 0350).
- Congressional adds to the active duty component's account for reserve component equipment.

c) Service Plan To Fill Modernization Shortages in the ARC: Effective modernization of ARC assets is the key to remaining a relevant and capable combat ready force. The events of September 11, 2001, cemented the Air Force's Total Force policy already in place. The ARC is working shoulder-to-shoulder with the active component to win the Global War on Terrorism (GWOT). No longer a force held in reserve, the ARC now shares the tip of the spear. The Air Force recognizes this fact and has made significant improvement in modernizing and equipping the ARC on par with the active component. While this is true, the reality of fiscal constraints still results in ARC modernization and equipment shortfalls. The Air Force has charged the lead commands with keeping the ARC a relevant and capable fighting force. Success in meeting ARC modernization goals depends on robust interaction with the lead commands and in keeping Congressional budgeting authorities informed of ARC requirements. There are no major issues affecting the full mobilization of the ARC.

d) Current Service Initiatives Affecting RC Equipment: To ensure that the ARC remains a relevant and capable part of the Total Force, the Air Force has committed to modernizing the ARC. There are a number of modifications and modernization efforts underway that will resolve reliability, maintainability, and capability issues for the ARC, several of which are highlighted below. Comprehensive reviews of ARC modernization initiatives can be found at <https://airguard.ang.af.mil/aq/> for the ANG and at <http://www.afrcrequirements.wpafb.af.mil/> for the Air Force Reserves. The following are some of the Air Force modernization initiatives that affect the ARC:

### **C-5 Galaxy**

**Avionics Modernization Program (AMP)**: This is a modification consisting of two major efforts. First, it replaces unreliable/unsupportable engine/flight instruments and flight system components. Secondly, it installs Global Air Traffic Management (GATM) and Secretary of Defense-directed navigation/safety modifications for the Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS).

**Reliability Enhancement Re-engining Program (RERP):** This program improves reliability, maintainability, and availability while increasing MC rate above 75%. RERP replaces TF-39 powerplant with the General Electric (CF6-80C2). Its new engine meets Stage III noise/emissions standards while improving payload capability and time-to-climb to meet GATM airspace requirements. Reliability enhancements include: APUs; electrical; hydraulic; fuel; fire suppression; pressurization/air conditioning systems; landing gear; and airframe.

### **F-16 Fighting Falcon**

**Falcon STAR:** Increased involvement in operations such as Operations SOUTHERN WATCH, NOBLE EAGLE and ENDURING FREEDOM has required employment of the F-16 fleet beyond the intended operational spectrum for which the aircraft was developed. As such, the purpose of the Falcon STAR (Structural Augmentation Roadmap) program is to replace or rework known life-limited structural parts to preclude the onset of widespread fatigue damage, maintain safety of flight, enhance aircraft availability and extend the life of affected components up to 8,000 hours. This program is distinct from previous F-16 structures improvement programs that have been identified through the Aircraft Structural Integrity Program (ASIP) as the weapon system has aged and operational use has evolved.

**Towed Decoys:** Towed decoys protect fighters from radio frequency (RF) guided missiles. The ALE-50 RF towed decoy is currently fielded on F-16 Block 40/50. Air Combat Command (ACC) has funded a software integration of the standard F-16 ALE 50 pylons into the F-16 Block 30 aircraft and fielding has begun. ACC is funding pylons for the entire F-16 Block 25-52 fleet to support training and deployment requirements.

### **A-10 Thunderbolt II**

**Precision Engagement:** Precision Engagement (PE) is the number one priority for the A-10 community and will transform the A-10 cockpit and capability. The A/OA-10 remains a legacy weapon system, yet is expected to execute critical wartime tasking such as Airborne Forward Air Controller, Close Air Support, Combat Search and Rescue, and Air Interdiction. The aircraft computer, cockpit displays, and weapons delivery capability is outdated and contributes to high pilot workload. The PE program delivers a new avionics suite, a data link and precision weapons capability that will keep the aircraft viable and increase its lethality and survivability.

### **F-15 Eagle**

**Fighter Data Link (FDL):** The FDL program is the key to future effective combat employment for the F-15. The need to tie together off-board and on-board sensors and to synthesize the resulting data into a clear picture of the entire engagement is essential to the F-15 pilot operating under the Combat Identification (CID) Rules of Engagement found in every theater of operation. "First look-first shoot" tactics are valid for both the F-15 and F-22 and require a robust CID capability. Operational tests and exercises consistently provide clear evidence that the FDL increases the kill ratio for the F-15 many times over the current capability, ensuring the F-15's lethality well into the 21<sup>st</sup> century.



**Night Vision Imaging System (NVIS):** The NVIS Lighting Program modifies F-15 interior and exterior lighting to be compatible with the operational use of Night Vision Goggles (NVG). With this modified lighting, F-15s will be able to operate in the full range of air-to-air mission scenarios. The NVIS cockpit lighting provides NVG compatible lighting external to the instruments and controls in the cockpit. The exterior lighting includes a covert lighting mode and filtering to make the normal aircraft lights NVG friendly.

### **KC-135 Stratotanker**

**Global Air Traffic Management (GATM) Modification:** This program will provide an upgraded avionics suite that meets the requirements for aircraft interoperability within the future aerospace environment. The avionics suite will be improved in four major functional areas: communications, navigation, safety and surveillance, and flight deck control. The program includes controller-pilot data link communication, direct voice communication with air traffic control, required navigation performance, and automatic dependent surveillance.

### **C-130 Hercules:**

**Phase I - Avionics Modernization Program (AMP):** This program will produce a baseline avionics configuration across the current C-130 fleet. Air Mobility Command, in coordination with ACC, ARC, and Air Force Special Operations Command, is undertaking the C-130 AMP to consolidate all E, H1, H2, and H3 aircraft into one configuration. The goal is to consolidate existing and projected aircraft modification programs in order to upgrade and standardize the aging C-130 fleet.

**Phase II - Structural, Engines, and Environmental Improvements:** Phase II is designed to bring all older C-130 variants to the same basic aircraft systems configuration to increase reliability, maintainability and supportability, and performance. Phase II will compliment the standardization effort of Phase I. All older C-130s will be equipped with the systems now present on C-130H aircraft. The upgrades would provide T56-A-15 engines, an increased capacity flight deck air-conditioner, auxiliary power units, and improved hydraulics.

### **C-26 Aircraft**

**Forward Looking Infra-Red (FLIR):** The C-26 Westinghouse WF-360 FLIR camera was replaced with a Westcam "Skyball". This program is now complete. The upgrade also included a sensor controller operating system upgrade, touch screen technology, emergency battery backup, Wulfsburg AM/FM/HF/VHF/UHF radios, and fire detection/suppression for the FLIR pod.

**Electro-Optical Photographic Cameras:** A program is under way to augment the "wet film" capability of the C-26 with a digital camera. This technology will allow digital pictures to be taken and printed onboard the C-26, thus saving days of wet film processing time and allowing law enforcement agents to leave the aircraft with hard copies of imagery data.

## **HC-130 Aircraft**

**Rescue System Upgrades:** A low-cost NVIS Compatible Lighting System modification is in the contract phase for the Combat Air Force rescue fleet. A Personnel Locator System will be installed on 210<sup>th</sup> Rescue Squadron, Kulis, AK, and 129<sup>th</sup> Rescue Wing, Moffet, CA, aircraft. This system will give rescuers bearing, range, and authentication information on downed aircrew equipped with the PRC-112 survival radio.

e) Service Plan to Achieve Full Compatibility between AC and RC: Although the ARC generally has older equipment, the Air Force, through the Total Force policy continues to modernize ARC assets. These modernization efforts allow the ARC to remain relevant and combat ready on par with the active component. The following sections address, in detail, the ARC's modernization programs.

## II. AIR NATIONAL GUARD OVERVIEW

### a) Current Status of the Air National Guard (ANG)

(1) General Overview: Events following the terrorist attacks against the United States on 11 September 2001 propelled the ANG into its highest peacetime operational tempo in history. Support for Operations ENDURING FREEDOM and NOBLE EAGLE reached unprecedented levels for both Homeland Defense and deployed operations worldwide. The mission of the ANG, first and foremost, is to be prepared as a member of this nation's Total Force military team to fight and win. The ability of the Guard to immediately respond to the President's declaration of war against worldwide terrorism validated the priority placed on insuring that the ANG is a front line fighting force capable of fulfilling any assigned mission. To ensure that the combat capability of our personnel and equipment is second to none, we aggressively pursue aircraft modernization and sustainment programs to ensure all ANG aircraft meet or exceed equivalent combat capability and mission requirements and relevance in the Aerospace Expeditionary Force (AEF). Filling its obligations in the AEF - while maintaining a high state of readiness for global commitment - is the ANG's number one priority. Our equipping philosophy continues to center around fulfilling the warfighting Combatant Commanders requirements via the Combat Quadrangle (CQ). The tenets of this quadrangle include Precision Attack, 24-hour Operations, Data Link/Combat ID, and Enhanced Survivability. The number one ANG modernization priority remains fielding precision strike capability in its fighters. To increase its precision strike capability, the ANG currently needs 96 precision targeting pods for F-16 aircraft, an avionics suite, data link, and 60 precision targeting pods for the A-10 fleet.

Today, the Air National Guard is comprised of more than 108,000 men and women with over 1,360 aircraft in 88 flying wings (94 squadrons) and 243 independent mission support units. Guard units are located at 168 civilian and 92 military installations in 54 states and territories. The ANG stands head and shoulders above other countries' reserve air components in its war fighting capability, professionalism, and technical competence. Few active air forces in the world, in fact, can match the ability of the ANG in the breadth and scope of its missions.

The total investment fly-away cost of the aircraft fleet alone exceeds \$48B. The current ANG contribution to the Total Force encompasses 24% of the rescue assets, 43% of the tankers, 43% of the theater airlift capability, 11% of the strategic lift, 32% of the general purpose fighters, 7% of the operational support aircraft capability, 26% of the tactical air support mission, 100% of the Joint Surveillance Target Attack Radar System (JSTARS) aircraft (45% of the aircrews and mission crews), 100% of the counter narcotics aircraft capability, and 100% of the continental air defense.

The success of the AEF depends on the vital contributions of the Total Force-Active Air Force (USAF), Air Force Reserve Command (AFRC), and ANG forces. In particular, the predictability and stability of the 15-month AEF cycle allows the ANG to participate at a greater rate than before. Currently, the air reserve component is meeting

or exceeding its 10% tasking commitment for the AEF. For example, the ANG provides more than 25% of the aviation packages, 6.8% of the electronic combat support, 42% of the tactical lift requirements, and 22% of the tanker requirements. In all, 28,500 ANG members participated in AEFs 1 to 10, Cycle 2 which commenced in January 2001. Additionally, partially mobilized Air Reserve Component (ARC) personnel have been deployed to fill critical USAF shortages both overseas and CONUS, in areas such as security forces, communications, civil engineering and intelligence.

Rapid technology changes have significantly impacted our defense capability. In order to stay effective and relevant, the ANG must continue to integrate new technologies into our legacy and new weapon systems, while leveraging innovative acquisition strategies. To accomplish this task, we identify, test, evaluate, and acquire combat enhancements for ANG aircraft and equipment at the ANG/Air Force Reserve Test Center (AATC), Tucson International Airport (IAP), AZ. The ANG modernization goal is to be in “lock step” with the United States Air Force (USAF), leveraging existing Air Force and joint programs whenever possible. Staff integration at the MAJCOM level, ANG/AFRC/USAF partnerships in a myriad number of programs, and the seamless interoperability at the unit level insure the highest state of readiness.

The National Guard and Reserve Equipment Appropriation (NGREA) is an essential component of the ANG’s modernization program. Using congressional language for budget guidance, the ANG *leverages* relatively small amounts of NGREA money with innovative acquisition business strategies to enhance combat capability. NGREA funding provides low-cost, yet significant, increases in combat capability for the Total Force. NGREA is a modernization success story for the ANG.



*Figure 1. ANG Funding Sources*

Accessible, survivable combat and mobility aircraft capable of operating seamlessly with active-duty counterparts around the clock, in all weather conditions, in any theater is not just desired, it is essential. In the future, our Total Force will explore new ways to optimize the Active, Reserve, National Guard, and civilian components to make the best use of our resources and people, and to build on a foundation of high standards and strong cooperation between our components. The Blended Wing concept, initiated with the JSTARS mission, is an effort to meld the best of what the ANG and the USAF can offer.

(2) Status of Equipment: The following paragraphs synopsise the Major Items of Equipment (MIE) within the ANG and the ongoing efforts to upgrade and modernize the force. *Table 1* contains a major item inventory for all ANG aircraft for fiscal years 2000 through 2006. The average ages of ANG aircraft are listed in *Table 2*. The compatibility between the current equipment in the ANG and the Active component (AC) is discussed in further detail in paragraph (c), maintenance issues in paragraph (d) and modernization programs and shortfalls in paragraph (e) by specific weapons system.

(a) Equipment On-hand

1. Fighter / Attack / Bomber Aircraft

a. F-16 A/B/C/D Fighter Aircraft: The ANG has over one third of all of Combat Air Forces' (CAF) F-16 aircraft in 28 squadrons. These aircraft range from the older F-16A/B model to the more capable F-16C/D, Block 52.



**F-16 Over Monticello**

*Block 25/30/32*: The majority of ANG F-16 aircraft are the Block 25/30/32 aircraft type. This block of aircraft has the Embedded Global Positioning System Ring Laser Gyro Inertial Navigation Unit, Countermeasures Management System (CMS), Night Vision Imaging System (NVIS), and Tactical Data Link as part of the trend-setting Combat Upgrade Plan Integration Details (CUPID) Program. These aircraft have experienced a dramatic increase in combat capability with the integration of CUPID and Litening II targeting pod from the Precision Attack Targeting System Program. CUPID was originally funded through NGREA and subsequently received USAF program funding. The ANG has supported increased funding in the FY 2003 budget for the Advanced Targeting Pod (ATP), a total force approach to precision attack. The Block 25/30/32 aircraft equipped with targeting pods and CUPID will be as combat capable as any F-16 in the USAF inventory. The Falcon Structural Augmentation Roadmap modifications are currently funded for an FY 2004 production start and are required for the airframe to support the increased demands of AEF and precision attack requirements. The Block 25/30/32 fleet will be capable of employing Global Positioning System (GPS)-aided munitions in FY 2003.

*Block 40/42*: The Block 40/42 aircraft are currently equipped with low altitude Navigation and Targeting Infra-red for Night (LANTIRN) targeting pods (precision strike) and have GPS navigation capability. Additionally, the Block 40/42 fleet received GPS-aided munitions capability in FY 2001. The Common Configuration Improvement Program (CCIP) will field Link 16 data link, color displays, AIM-9X capability and a variety of other programs beginning in FY 2004. As an interim Link 16 capability, the ANG is funding the USAF standard Improved Data Modem and NVIS with NGREA and

USAF funding assistance. The standard Inertial Navigation Unit was replaced with the Ring Laser Gyro in FY 2002. Finally, the Block 40/42 Operational Requirements Document identifies a need for an “increased performance engine that provides a 20% to 30% thrust increase along with improved reliability and maintainability.” The simultaneous carriage of both LANTIRN and High Speed Anti-Radiation Missile Targeting System (HTS) pods significantly degrades the aircraft performance with the current F-100-PW220 engines. The ANG requires 63 F-100-PW-229 engines for these aircraft. Installation of these engines in ANG Block 42 aircraft will dramatically increase combat capability and performance. The Block 40/42s have begun to receive the Multi-Functional Information Distribution System (MIDS) Low Volume Terminal (LVT-1) data link to provide full connectivity to the Link 16 networks now in place world-wide in all contingencies to include Operation NOBLE EAGLE and Operation ENDURING FREEDOM. Programmed improvements will keep ANG aircraft fully capable of meeting its AEF requirements.

*Block 52:* The Block 52 fleet began receiving CCIP (including NVIS) in FY 2001. The ANG has reached Initial Operational Capacity (IOC) with the HTS. The Block 52s have begun to receive the MIDS LVT-1 data link to provide full connectivity to the Link 16 networks now in place world-wide in all contingencies to include Operation NOBLE EAGLE and Operation ENDURING FREEDOM. These are crucial combat capabilities in high demand by all warfighting commanders.

b. A/OA-10 Close Air Support Aircraft: The six ANG squadrons account for 30% of the CAF A-10 inventory. All A-10 units are currently equipped with Night Vision Goggles (NVG) and NVG compatible lighting. The A-10 is scheduled to be equipped with a new fire control computer, cockpit displays, and aircraft software to allow the aircraft to support a tactical data link, GPS and GPS-Aided Munitions (precision strike) and a targeting pod. This program, called Precision Engagement, will be a multi-year program and is partially funded. As funds are made available, the program will be structured in a similar manner to the current F-16 CUPID program to provide increased survivability and greater navigation accuracy and mission capability. Funding for this program is a combination of NGREA and USAF program dollars. Other improvements to the A/OA-10 include CMS for enhanced aircraft survivability and the Lightweight Airborne Recovery System, which will give range and more accurate bearing to downed aircrew members equipped with the PRC-112 survival radio.



The A/OA-10 was documented as having serious thrust deficiencies in its operational environment. In order to meet the tasks of war fighting units, Combatant Commanders have had to reduce fuel loads, schedule take-off times for early morning hours and refuse mission taskings that increase gross weights to unsupportable limits in

high-density altitude environments. Tasking has migrated from low altitude (the design criteria of the aircraft) to medium altitude. For the last four years, the Air National Guard/Air Force Reserve Weapons and Tactics Conference has listed engines as their number one priority for the A-10. Future viability as a full force team player is dependent on adequate thrust and maneuverability in a maximum gross weight configuration.

c. F-15 A/B/C/D Air Superiority Fighter Aircraft: The ANG has all of the CAF F-15 A/B combat coded fleet in six squadrons. While the ANG has a predominantly A/B fleet, the 173<sup>rd</sup> Fighter Wing (FW), Kingsley Field, OR, differs with a combination of B, C and D model aircraft.

The A/B model aircraft are tasked for the Air Superiority and Continental Air Defense missions and take part in the Expeditionary Aerospace Force (EAF) rotation while the 173<sup>rd</sup> is tasked as a Flying Training Unit (FTU). All F-15 aircraft, to include the ANG, are currently being equipped with the MIDS Fighter Data Link (FDL). This upgrade gives ANG F-15 aircraft state-of-the-art situational awareness capability and common employment capability with the



**F-15**

USAF F-15 fleet. FDL is currently partially installed in all of the combat coded units. The installation for the combat coded units will be complete by July 2003 and the training unit by October 2003. All units are currently equipped with NVGs and also have fielded an interior NVIS cockpit lighting modification. This modification is low cost and will be completed at the unit level. Several combat enhancements are in the works for the F-15. The BOL Countermeasures Dispenser (BOL) infrared (IR) has been approved for procurement which will give the aircraft added protection from potential IR missile threats. Current focus is on upgrading the F-15's ability for enhanced Combat Identification and Congressionally-mandated Mode 5 and S capability through procurement of an air-to-air interrogator and an Identification Friend or Foe (IFF) system. Other programs include upgrading the current unsustainable cockpit recording system with a new digital recording system.

## 2. Air Refueling Aircraft

KC-135E/R Air Refueling Tanker Aircraft: The ANG's air refueling tanker force represents 58% of the total force's refueling aircraft in 23 squadrons. Tankers extend the range of airlift and combat aircraft by enabling these planes to be refueled in flight. The Air Mobility Command, on behalf of the ANG, is working Global Air Traffic Management (GATM) upgrade programs for the KC-135 fleet. Additionally, the ANG is re-engining its KC-135E aircraft with monies



**KC-135**



received from Congressional adds to the KC-135R configuration, extending its combat radius and fuel offload capability. Currently, the Air Force is evaluating a possible lease arrangement for a replacement tanker aircraft. If the Air Force leases or buys replacement tankers, the ANG plans to receive KC-135Rs from the Active tanker force structure and retire KC-135Es. The desired end-state of the ANG KC-135 force structure is a common fleet of KC-135R aircraft. Currently in the planning stages is a design to accelerate the cascade of forty-eight (48) KC-135R models to the ARC to replace sixty-one (61) KC-135E models.

### 3. Airlift Aircraft

#### a. C-5A Strategic Airlift Aircraft:

The ANG's C-5As at the 105<sup>th</sup> Air Wing (AW), NY ANG, comprise over 10% of the entire C-5 airlift fleet. The reliability of the A model continues to be a concern. Two major modification programs now in work or soon to be implemented will significantly improve the C-5's reliability, maintainability, and availability. These programs include the Reliability Enhancement and Re-engining Program (RERP) and the Avionics Modernization Program (AMP). AMP is planned for all C-5 aircraft, although not fully funded. Modifications should be complete in the FY 05-07 timeframe, depending on funding. RERP is also planned for all 112 aircraft, but A model modifications do not begin until 2011. If AMC gets approval for its 222 buy initiative for C-17s, all A models will be retired, and the ANG will accept AMP or RERP B-models.



C-5

b. C-141C Strategic Airlift Aircraft: Air Mobility Command (AMC) identified a core of 62 ARC/C-141C aircraft that will remain in the inventory through FY 2006. They will remain an integral part of the strategic airlift forces until the C-17 is fully fielded. The core 62 aircraft, which include 17 ANG aircraft in two squadrons, received four concurrent modifications required to keep them flying until the C-17 transition is complete. The modifications included the All Weather Flight Controls System, the GPS Enhanced Navigation System, the Fuel Quantity Indicating System, and the Defensive Systems package providing missile warning and countermeasures dispensing. Additional safety modifications, incorporated in the C-141, include the Traffic Alert and Collision Avoidance System II and the Terrain Avoidance Warning System.

c. C-130 Theater Airlift Aircraft: The ANG comprises 43% of the C-130 tactical airlift capability of the Air Force. The ANG C-130E/H fleet is dispersed across 25 units or roughly one-third of ANG flying units. The ANG is working with Congress and AMC to obtain upgrades such as the Low Power Color Radar (Aircraft Procurement-Navy, APN-241) for our fleet. We are also fully engaged with the C-130 AMP. Eight C-130Js have been delivered to the 135<sup>th</sup> AW, MD ANG. There are



currently ten C-130Js on contract for the ANG; three for the 143<sup>rd</sup> AW, RI ANG, two for the 146<sup>th</sup> AW, Channel Islands, CA, and five EC-130Js for the 193<sup>rd</sup>



**C-130**

Special Operations Wing (SOW), PA ANG. The FY 2002 Appropriations Bill included funding for one additional aircraft for the 193<sup>rd</sup> SOW and two aircraft for western states fire-fighting in the ANG, with bed down with the 146<sup>th</sup> AW, CA ANG. There are currently five additional CC-130Js, an extended version of the C-130J that can carry two additional pallets or 46 more troops, fielded at

two other airlift units; three at the 143<sup>rd</sup> AW, RI ANG, and two for the 146<sup>th</sup> AW, Channel Islands, CA. Beginning in FY 2004, the C-130 community will begin a planned fleet reduction of five (5) aircraft per year until reduction goals are met. This plan is still subject to further modification.

#### 4. Intelligence, Surveillance and Reconnaissance (ISR) /

##### Electronic Warfare

##### a. E8-C JOINT SURVEILLANCE TARGET ATTACK

RADAR SYSTEM (JSTARS): The JSTARS is a long-range, air-to-ground surveillance system designed to locate, classify and track ground targets in all weather conditions. While flying in friendly airspace, the joint Army-Air Force program can look deep behind hostile borders to detect and track ground movements in both forward and rear areas. It has a range of more than 150 miles (250 km). These capabilities make JSTARS effective for dealing with any contingency, whether actual or impending military aggression, international treaty verification, or border violation. All E-8C aircraft transferred to the ANG on 1 Oct 2002 and reside with the 116<sup>th</sup> Air Control Wing (ACW), Robins AFB, GA. The 116<sup>th</sup> ACW is the result of the first time employment of the “Future Total Force” concept. This concept results in a “blended” wing comprising active duty and ANG personnel. Current forecasts are for a long-term end strength of 19 JSTARS aircraft; however, this is beyond the Future-Years Defense Plan and, therefore, planning is for 17 aircraft only.



**JSTARS**

##### b. EC-130E Electronic Warfare Aircraft:

This Psychological Operations aircraft is scheduled for conversion to the new EC-130J model.

This conversion transfers the EC-130E Special Mission Equipment to the new EC-130J Commando Solo mission. Currently, three basic airplanes have been delivered and two more are on contract for the 193<sup>rd</sup> SOW, PA ANG. The contract for transfer of the Special Mission Equipment was awarded in September, 2000.

c. SENIOR SCOUT: SENIOR SCOUT is an airborne tactical signals intelligence (SIGINT) collection system designed to provide near-real-time communications intelligence and electronic intelligence across the spectrum of conflict. The centerpiece of the SENIOR SCOUT system is a palletized shelter containing collection, processing, and communication equipment that is uploaded into a modified C-130 aircraft (Super E or H1/2). The total system is comprised of the equipped shelter, antennas, and associated aircraft modification kits. Rapidly deployable and low profile, SENIOR SCOUT provides a timely, tailored, worldwide SIGINT collection capability to satisfy national, theater, and special operations requirements. SENIOR SCOUT systems are operated and maintained by the 169<sup>th</sup> Intelligence Squadron of the Utah ANG. Both ANG and active Air Force C-130s carry SENIOR SCOUT. The SENIOR SCOUT program, including system modernization, is funded through FY 2009. FY 2003 programmed modernization includes Joint Tactical Information Distribution System (JTIDS), special signals enhancements and cellular improvements. A Manual Electronic Intelligence capability, Network Centric Cooperative Targeting, Demand Assigned Multiple Access, and Common Data Link (CDL) enhancements are planned for the out years.

d. SCATHE VIEW: SCATHE VIEW is the designated program for a quick reaction roll-on/roll-off imagery capability flown on modified C-130E/H aircraft. Within the ANG, the SCATHE VIEW mission equipment is operated by the 152<sup>nd</sup> Intelligence Squadron and carried on modified 152<sup>nd</sup> AW C-130s. The Nevada ANG has eight modified C-130H2 aircraft and three SCATHE VIEW turret systems (balls). SCATHE VIEW, within the ANG, is not yet operational, but is expected to reach IOC in early FY 2003. These imagery systems and aircraft are embedded in the Nevada ANG and United States Air Forces-Europe as Keen Sage. The SCATHE VIEW system consists of a modified C-130 aircraft with an externally attached turret providing Forward



C-130 w/ SCATHE VIEW

Looking Infra-Red (FLIR), daylight color TV, spotter scope, and laser range finder. The aircraft carries a roll-on/roll-off, full-pallet Airborne Sensor Control Station (ASCS), comprised of FLIR controls; a monitor; a photo-thesis terminal, Situational Awareness Display System (and UHF / Satellite Communications (SATCOM) digital / voice communications). Two airborne analysts operate the ASCS for onboard exploitation and dissemination to a deployable ground receiver station.

e. F-16 Theater Airborne Reconnaissance System (TARS):

This digital electro-optical system is the only Air Force high speed penetrating



**F-16 Over Richmond, VA**

reconnaissance asset. It is capable of covering 2,880 NM<sup>2</sup>/Hr. The 192<sup>nd</sup> FW, Richmond, VA, and the 127<sup>th</sup> FW, Selfridge, MI currently employ it. The 115<sup>th</sup> FW, Truax Field, WI, has been designated as the next unit to receive TARS. This system is being upgraded to provide a near real-time data link and synthetic aperture radar for a limited number of pods. The upgrades will make this system a full player in time sensitive targeting of mobile and re-locatable targets.

f. The Air Force Distributed Common Ground System

(DCGS): DCGS is a family of systems providing multi-site, multi-intelligence collection and processing operations servicing data from U-2, Unmanned Aerial Vehicles, the TARS, Eagle Vision and other ISR systems. The ANG is a full participant in both signals and imagery Processing Exploitation and Dissemination operations. ANG Intelligence units (169<sup>th</sup> IS UT ANG, 152<sup>nd</sup> IS NV ANG, 123<sup>rd</sup> IS AR ANG, 117<sup>th</sup> IS AL ANG), although part of Air Force DCGS, lack adequate funding for Digital Transit-case Systems and Senior Year Gateway equipment and communications connectivity and sustainment needed to provide the crucial reachback support to the air component warfighter during crisis and contingency operations. Without acquisition and sustainment funding, ANG DCGS elements cannot effectively be a total force participant in providing theater and air component commanders with operational intelligence being linked from diverse ISR asset inputs to DCGS architecture. ANG systems must keep pace with active component systems or they will not meet DOD and USAF compatibility standards.

5. Special Airlift Mission Aircraft

a. LC-130 Polar Airlift Aircraft: Ski-equipped aircraft

support airlift operations to cold weather areas where other airlift aircraft cannot operate. The 109<sup>th</sup> AW, NY ANG, has 14 C-130 aircraft. Ten are LC-130 ski equipped and four are standard wheeled C-130s. Four of the LC-130s are owned by the National Science Foundation and operated by the 109<sup>th</sup>. The LC-130 aircraft have the unique ability to operate from unimproved, deep field, open snow areas using Jet Assisted Take-Off (JATO) solid fuel rocket motors for additional thrust. Since the old JATO inventory is nearly exhausted, a requirement for new replacement JATO motors, which meet current environmental and safety regulations, has been approved. When funded, development can begin as soon as possible. Additionally, these aircraft have been modified with the APN-241 Low Power Color Radar and Electronic Flight Instrument System Suite.

b. C-38A Special Airlift Aircraft: The C-38 Gulfstream G-

100 business jet was chosen to replace four C-21 aircraft. The first two C-38 aircraft were delivered to the 201<sup>st</sup> Airlift Squadron, DC ANG, Andrews AFB, MD, in the third quarter

of FY 1998. With only two aircraft available, the squadron is not at full mission capability; as a result, it is difficult to insure consistent airlift support. Two more C-38s are needed to bring the unit to full mission capability and ensure effective use of the aircraft.

c. C-22 Special Airlift Aircraft: The C-22 fleet provides long-range worldwide transport of USAF, DOD senior officials, foreign dignitaries, and legislative and executive branch members. The C-22 is flown by the 201<sup>st</sup> Airlift Squadron. The C-22 is being phased out in favor of the C-40C.

d. C-40 Special Airlift Aircraft: The phase out of the C-22 created a requirement for four 40- to 70-passenger jets with long-range capability for worldwide transportation of USAF, DOD senior officials, foreign dignitaries, and legislative and executive branch members. In the FY 2002 budget, Congress permitted DOD to lease four (4) Boeing 737 commercial aircraft for the Air Force and the ANG. The military designation for the 737 Boeing Business Jet is the C-40. In September CY 2002, the ANG received two (2) C-40s to begin replacement of the C-22s. An additional delivery is planned for FY 2003. To fulfill the total requirement, one additional C-40C (the fourth) aircraft is required.



**C-40C**

e. C-21 Special Airlift Aircraft: The ANG operates two C-21 aircraft at the 200<sup>th</sup> Airlift Squadron, Peterson AFB, CO. These aircraft transport high-level DOD personnel to various CONUS locations. All maintenance and upgrades are managed by the Oklahoma City Air Logistics Center. and the aircraft are maintained as part of the AF's C-21 fleet.

## 6. Rescue Aircraft

a. HH-60 Helicopter: The new engines have 20% more power providing a greater margin for safety on hot days and at high altitude. This program was completed in September 2001. The Self-Protection System (SPS) provides a missile warning system and countermeasures dispensing system for chaff and flares. Additionally, an ARC-210 radio will be installed to provide SATCOM capability. This program began installations in FY 2001 and will continue through FY 2004. To remain compatible with the theater command and control networks, HH-60 requires



**HH-60G**



immediate installation of a tactical data link. Finally, a defensive armament upgrade is required to correct a critical limitation of current defensive weapons. The selected FN M3M .50 caliber machine gun is a cost effective, high rate of fire, defensive weapon.

b. HC/MC-130 Aircraft: A low-cost NVIS Compatible Lighting System modification is in the contract phase for the CAF rescue fleet. A Personnel Locator System will be installed on Kulis, AK, and Moffet, CA, aircraft. This system will give rescuers bearing, range, and authentication information on downed aircrew members equipped with the PRC-112 survival radio. A FLIR program was funded for the HC-130 fleet for FY 2001. A SATCOM program was planned for installation in FY 2002. The ANG received four MC-130P Combat Shadow aircraft in FY 2000 at the 129<sup>th</sup> Rescue Wing, Moffett Federal Aviation Facility, CA.



**HC-130**

## 7. Air Control Systems

a. AN/MPN-26 Mobile Approach Control System (MACS): MACS is a mobile radar approach control system that will support the United States Defense Planning Guidance requirement for US military forces to be highly mobile and capable of rapid response on a global basis. The AN/MPN-14 presently being used by the ANG was fielded in 1968. Modification took place in 1980, but spare parts have become obsolete to repair failing equipment. The USAF has begun an acquisition effort to replace the current radar (AN/MPN-14K). Funds were appropriated in FY 2001 for research, development, test, and evaluation (RDT&E) of the AN/MPN-26 (MACS).

b. Modular Control System (MCS): MCS provides deployable tactical command and control for the Joint Force Air Component Commander. This ground-based system works in coordination with the airborne elements to include Airborne Warning and Control System and JSTARS to provide command and control of our air forces. The system consists of TYQ-23 Operations modules and TPS-75 Tactical Radar. Both are 1980s systems that need modernization to meet new threats to deployed forces. A program, the Battle Control System, is in initial development to replace the MCS and also the aging North American Air Defense Command (NORAD) Air Defense System, the FYQ-93.

## 8. Other Aircraft Systems

a. Modular Airborne Fire Fighting System (MAFFS): The ANG (three C-130 squadrons) is an active participant with the United States Departments of Agriculture and Interior fighting fires that threaten our forest resources. MAFFS, the current system, is a roll-on/roll-off platform that carries 3000 gallons of retardant used in

fighting forest fires. The retardant is discharged on unburned forest to slow the spread of the fire. MAFFS is 30 years old and is reaching the end of its operational life. MAFFS was scheduled for decommissioning by the US Forest Service after the 2002 fire season. Congress has appropriated \$11.1M for replacement of this system. The ANG Requirements Division (ANG/XOR) and the US Forest Service are currently procuring the Airborne Fire Fighting System (AFFS). The contract was awarded to Aero Union Corporation in November 2000. Developmental testing is progressing with delivery of a full-scale operational prototype scheduled for September 2002.



**MAFFS**

b. C-26 Counter Drug Aircraft: Aircraft upgrades to the C-26 involving the WF-360 FLIR imaging system began in FY 1998 and were completed in FY 2000. In addition to the FLIR, the upgrade included a sensor controller operating system upgrade, touch-screen technology, emergency battery backup, Wulfsburg AM / FM / HF / VHF / UHF radios, and fire detection / suppression for the FLIR pod. An Electro-Optical camera upgrade modification was completed in June 2002 adding digital imagery capability to the C-26 mission. Included was a replacement Flat Screen Display in place of the Barco, Inc., monitor and street level mapping. Finally, vendor demonstrations and a field study were conducted by GTRI for streaming video downlink capability in February 2002.

(b) Average Age of Major Items of Equipment: Overall, the average age of aircraft MIE within the ANG is about 23 years. However, the E-8C airframe has an average in service age of over 34 years. All of the prior year flying hours were consumed in heavy use commercial aircraft with varying standards of maintenance due to ownership by commercial airlines outside the United States. The P-4 fire fighting vehicles (30+ years) and air control radars (45+ years) on hand are even older. A complete list of the age of ANG aircraft is located in ANG *Table 2*.

(c) Compatibility of Current Equipment with Active Component:  
Compatibility problems exist between ANG and AC equipment in the following areas:

1. F-16A/B (Block 10/15): The components of these aircraft are no longer compatible with the AC's newer aircraft and require special logistical support. Many ANG F-16s also lack precision attack capability and electronic warfare compatibility with AC capabilities. Additionally, Congress mandated that no funds can be obligated to modify aircraft not equipped with GPS after FY 2005. The ANG uses F-16A/Bs to support Foreign Military Sales (FMS) training of foreign pilots. No funds are available for a GPS modification, and since ANG expects to continue the FMS training

program for the foreseeable future, continued modification of these aging aircraft is in jeopardy.

2. F-15A/B: The F-15 A/B combat coded fleet in the ANG has substantially less capability than the upgraded F-15 C/D combat coded fleet in the AC units. The radar on the A/Bs is the APG-63, the original radar for the F-15. The AC fleet is being upgraded to the V(1) and V(2) versions. The upgrades address maintenance and reliability issues, supportability issues, and add significant performance enhancements. The ANG aircraft suffer an ever-increasing challenge to keep the old radars operating, even with lesser capability. The F-15A/B aircraft are equipped with the F-100-PW-100 turbofan engine, the earliest production configuration engine, which has become difficult to maintain and support. The electronic countermeasures (ECM) capabilities of the A/B are clearly inferior to the C/D models. The ALR-56A has minimal support from the Systems Program Office to include combat reprogramming capability to meet theater specific threats. An old, slow processor degrades the effectiveness of all of the subsystems in the ECM suite. The AC will receive the Joint Helmet Mounted Cueing System (JHMCS) for high off-boresight targeting of the AIM-9X, critical to the within-visual-range arena, in the near future. The ANG A/B models are not scheduled to receive the JHMCS. The AC fleet has new flight simulators with full system visuals and the latest aircraft modifications. The ANG has the older, less effective Full-Mission-Trainers. The ANG has demonstrated its desire to increase their combat effectiveness by pioneering and investing in several subsystems for the AC up to a full operational test and evaluation. The systems include the BOL, an advanced IFF/Air-to-Air Interrogator (AAI), and new digital recorders. As the F-22 fields, all ANG F-15 A/Bs will be replaced with F-15 C/Ds cascaded from the active AF with the capabilities detailed above.

3. KC-135E: The engines on the KC-135E models are becoming less reliable and maintainable and do not provide the improved performance found in the KC-135R model. The inferior aircraft performance restricts refueling off-loads and potential usable runways for the ANG E models versus the active duty R models. Current plans call for cascading 48 KC-135R models from the AC to the ARC in FY 2004 through FY 2006. Thirty-two (32) will go to the ANG and the remainder will go to the AFRC (16). At the same time, 67 KC-135E models will be retired, and the savings used in part to fund an engine strut replacement program for the remaining E-models. By FY 2004, the ANG is scheduled to have 78 KC-135E and 126 KC-135R aircraft. This distribution is still in the planning stages, at this writing, and could change based upon the results of the FY 2004 budget process.

(d) Maintenance Issues: The F-16A/B series fighters are no longer considered combat deployable and system age is significantly affecting supportability and mission readiness. Only one combat-coded F-16A unit exists and it will be upgraded to the F-16C as soon as aircraft become available. Three Block 42 F-16 units maintain LANTIRN precision targeting capability only by sharing one unit's complement of LANTIRN pods and support equipment. The lack of the requisite support equipment and

full complement of LANTIRN pods impacts the overall deployment ready status of precision targeting assets.

The KC-135 suffers from GATM non-compliance, and the KC-135E variant can no longer meet global environmental standards. Corrosion and structural problems severely affect the ANG's C-5 fleet. Air defense Regional and Sector Air Operations Center data processing capabilities are also becoming inadequate at the operations centers.

The JSTARS aircraft still have the original engines, leaving the aircraft underpowered and unable to operate at altitudes required for the mission. Other future aircraft modifications include GATM and to replace the Class 2 JTIDS with MP-CDL in the FY 2005-2006 timeframe. The added inspections and associated workload done to support the aging aircraft program, of which the E-8C is part, is significant. Due to these aircraft having been acquired from a variety of commercial sources well into their lifespan, there are significant corrosion and structural inspections that must be performed that would not be required for newer aircraft. For example the increased maintenance costs for corrosion control inspections done during a Programmed Depot Maintenance make up almost 75% of the total workload for the inspection.

The MPN-14K radars are well beyond their planned service life, have long passed their point of economical sustainment, and now experience excessive downtime and unacceptably low rates of operational availability. Although some upgrades have been made to the more than 45-year old equipment, currently there are no spare parts available with which to replace failing equipment.

(e) Modernization Programs and Shortfalls: The ANG's modernization program revolves around the CQ and the requirements for a robust and capable force. *Table 8* highlights the ANG's current top ten Unfunded Priority List. Greater detail on specific programs is provided below:

1. GATM: The ANG, as a part of the Total Air Force, is not able to adequately prepare for present and future GATM requirements and Stage III noise reduction standards. This is placing severe restrictions on present and future global operations. Although a number of alternatives for various aircraft are under study, they lack funding which will place severe constraints on modification schedules.

2. Air Refueling Aircraft Operational Requirements Document: The ANG began initial work with AMC to identify requirements for a replacement aircraft (dubbed the KC-X) for the current aging KC-135E/R air-refueling fleet. Based upon the Tanker Requirements Study-2005, a projected need exists for a 500-600 tanker fleet. The replacement tanker aircraft must be multi-role and interoperable with US and allied forces. The aircraft must be equipped with boom and drogue capability on the same sortie. In addition, the aircraft must be capable of: carrying both passengers and cargo; all weather, day or night operations; and in-flight receiver air refueling.



The Air Force is advocating an interim program to lease 100 Boeing 767s to accelerate recapitalization of the fleet. However, this is a partial solution (since the bulk of the tanker fleet is still KC-135s) and a future comprehensive recapitalization plan must be drafted.

3. C-130 Theater Airlift Aircraft: AMC, in coordination with Air Combat Command (ACC), AFRC, Air Force Special Operations Command, and the ANG, is pursuing an avionics modernization program to convert all C-130/E/H1/H2/H3 aircraft into one baseline avionics configuration. The goal is to have only two configurations of C-130 aircraft by FY 2015 (C-130 and C-130J). The program is broken down into Phase 0 (Enabling Modifications)-ongoing, Phase 1 (Avionics Modernization Program)-contract awarded to Boeing Company in July, 2001, and Phase 2 (Structural Engines and Environmental Improvements)-FY 2005 for selected E-model aircraft.

4. F-15A/B Fighter Aircraft: The F-15A/B aircraft are equipped with the F-100-PW-100 turbofan engine, the earliest production configuration engine, which has become difficult to maintain and support. The F-15 A/B engines are a chronic readiness issue due to worn engine cores and erosion of availability of contractors who manufacture the parts. Due to a shortage of funds in the F-15 modernization program, the decision was made by ACC to prioritize the active duty F-15 C/D fleet for the 220E engine upgrade. The AC F-15C/D engines are being modified using an F-100-PW-220E engine modification kit to replace several of the most troublesome components. The ANG will inherit some engine upgrades when combat-coded F-15 C/Ds flow to the ANG, however, this could be after FY 2009. Current ACC procurement of F100-PW-220E Modification Kits is limited to 73 in FY 2004 (302 are required to modify the ANG fleet of 126 aircraft and 20% spares). The ANG funded 26 kits through FY 2002. The F-15 A/B could enter the five-year window prior to retirement as early as 2004, which invokes the sunset restrictions on modernization programs. Modification kits provide substantial maintenance and performance improvement for significantly less cost than new production engines. Despite modification to the 220E configuration, F-100-PW-100 engines will have fewer and fewer serviceable original components remaining, eventually necessitating at least limited procurement of “zero time” new production engines. A combination of these two approaches (modification kits and new production engines) is a necessity for mission-capable ANG F-15 engine health beyond FY 2010.

5. F-16 Fighter Aircraft: The F-16 fleet requires continued modernization to sustain combat capability. One of the most significant issues is force structure. Attrition reserve is being depleted as new procurement has essentially halted pending F-22 and F-35 (JSF) deliveries. Also, multiple programs were initiated to pursue upgrades necessary to overcome diminished manufacturing sources, decreased reliability and sustainability, and an increased requirement for processing capability. These programs include the Heads Up Display (HUD) Advanced Electronics Unit (AEU). Engineering Management Development on the HUD AEU program is Congressionally funded through the Commercial Operations and Support Savings Initiative, but no procurement funds are available. Continued modernization efforts include the Advanced IFF, color displays, Military Standard (MIL STD) 1760 wiring, and the JHMCS.

6. C-40C Special Mission Aircraft: The C-22 fleet (flown and supported by the 201<sup>st</sup> Airlift Squadron, DC ANG, Andrews AFB, MD) will be retired in FY 2003. This left a requirement for four 40-70-passenger jets with long-range capability for worldwide transportation of USAF, DOD senior officials, foreign dignitaries, and legislative and executive branch members. In the FY 2002 budget, Congress permitted DOD to lease four (4) Boeing 737 commercial aircraft for the Air Force and the ANG. The military designation for the 737 Boeing Business Jet is the C-40. The replacement of the C-22 began with the delivery of two (2) C-40s in September 2002. An additional delivery is planned for early FY 2003. In order to fulfill the total requirement, one additional C-40C aircraft is required.

7. AN/MPN-14K Radar: Research and development funding required for engineering and system integration development prior to commencing a full-scale acquisition effort was provided in FY 2001.

8. Electronic Warfare: Electronic Warfare capabilities across the USAF have been suffering from a lack of sustainment and modernization efforts over the past decade. The USAF, with ANG participation, is now addressing these shortfalls through various activities to identify problems and solutions for the corporate USAF. Near term priorities include sustainment and modernization of electronic attack pods and support equipment, increased situational awareness through improved radar warning receivers, procuring covert countermeasures, integrating self protection systems, and reestablishing an USAF electronic attack capability. Since ANG aircraft are typically older, they contain a predominant proportion of the older, less capable, and less reliable electronic warfare equipment. A number of equipment upgrades will be required over the next 5-10 years to address these requirements.

9. Air National Guard Ranges: Range equipment modernization at the 14 ANG air-to-ground ranges has also suffered from a lack of resourcing for the last decade. Continued deterioration of range infrastructure has reduced combat training quality. Threat emitter systems that are currently in use at ANG Weapons Ranges were fielded in 1985, are no longer sustainable and do not replicate current threat systems. Replacement systems have been identified and the USAF Combat Training Range Review Board has funded eighteen units. The total ANG requirement is for 30 of these emitters. Other weapons range transformation requirements include High Fidelity Targets, laser and weapons scoring systems and Laser Target Designators, all required to provide aircrew feedback. ANG F-16s are currently equipped with Situational Awareness data Link (SADL) which provides greater air and ground combat environment orientation. Aircrews can only train in the SADL air-to-ground mode at one ANG range. SADL installation is required at fifteen ANG Ranges. Upgrades to range instrumentation are also required to support the next generation of air-to-air combat training. An urgent and compelling need exists to provide "Rangeless" Air Combat Maneuvering Instrumentation (ACMI) systems to support ANG flight training requirements, to include the three ANG Formal Training Units that train pilots. The use of "Rangeless" ACMI increases training effectiveness, provides realistic "launch and leave" weapons simulation

and Real Time Kill Removal while improving quality of life by reducing operations tempo and also providing a superior debriefing fidelity.

(f) Overall Equipment Readiness

1. Aircraft: Although ANG weapon systems are often older generation, aircraft are generally in a mission ready, deployable condition. In large part, this is due to the excellent maintenance professionals in the ANG. However, because of capability shortfalls with older equipment, some aircraft are not considered fully mission capable by the theater Combatant Commanders for deployment to their area of responsibility. This mission shortfall is primarily due to a lack of precision weapons engagement capability. That is why modernization of older F-16 Block aircraft, for example, is a priority for the ANG.

2. Other Equipment: Air traffic control and approach control facilities, while still functioning, are generations behind the state-of-the-art in their design. In addition, again due to the age of the equipment, the logistics tail for some equipment is now inadequate, awkward, overly expensive or non-existent. The Air Defense System is estimated to be unsupportable by FY 2009.

(g) Other Equipment Specific Issues

1. New Missions: Several new missions have been assigned to the ANG in recent years while others have been expanded.

F-15C pilot training for ANG and AC pilots is currently being conducted at the 173<sup>rd</sup> FW, Kingsley Field, OR. This mission will continue to grow as the active USAF transitions to the F-22. F-16 pilot training for the ANG, AC and allied air forces has been conducted at the 162<sup>nd</sup> FW, Tucson IAP, AZ, for many years. In FY 2004, the unit will begin training in F-16 Block 60 aircraft. The ANG has now added two additional FTUs at the 149<sup>th</sup> FW, Kelly Field, TX, and the 178<sup>th</sup> FW, Springfield, OH. This mission will continue to grow as the USAF begins fielding the F-35. The ANG now has a total of four fighter FTUs comprising some six squadrons and the 189<sup>th</sup> AW with one C-130E airlift squadron.

Special Tactics Forces provide a unique capability to deploy with air and joint ground forces in the execution of Direct Action, Counter-terrorism, Foreign Internal Defense, Humanitarian Assistance, Special Reconnaissance, austere airfield operations missions, and Personnel Recovery. Special Tactics Forces operate in the six geographic disciplines (urban, water, desert, arctic, mountain, and jungle) in day or night, to include friendly, denied, hostile, and sensitive areas, and require a vast assortment of equipment to execute their mission. The only ANG Special Tactics unit is the 123<sup>rd</sup> Special Tactics Squadron (STS), KY ANG. The 123<sup>rd</sup> STS converted from a flight of 25 to a squadron of 74 personnel in FY 2001. The increase in personnel brought about a commensurate increase in equipment needs, with a current shortfall of \$6.2M in items ranging from parachutes to scuba gear to all terrain vehicles and watercraft and medical gear. The STS

members can deploy independently or with a team and require full equipment loads to fulfill the flexibility required in this highly specialized mission area.

The ANG's role within USAF Space Command (AFSPC) is in the process of significant growth. Six space units are currently activated or going through transition. The 137<sup>th</sup> Space Warning Squadron (SWS), located in Greeley, CO, provides immediate, worldwide missile warning and space launch detection to NORAD, unified commanders, theater CCs, the Joint Chiefs of Staff, and the President and Secretary of Defense. To accomplish this, the unit employs the USAF's only survivable, mobile satellite communications ground system linked to Defense Support Program (DSP) satellites. This unit is fully operational. The unit will convert in FY 2003 from Defense Satellite Communications System to Military, Strategic and Tactical Relay (MILSTAR) and will undergo another conversion from DSP to Space Based Infrared Radar System in the FY 2009-2010 timeframe. Sixty percent of the unit's 284 personnel are full-time. The 148<sup>th</sup> Space Operations Squadron (SOPS) located at Vandenberg AFB, CA, operates the MILSTAR Operations Center. Designed to be a backup to 4<sup>th</sup> SOPS at Schriever AFB, CO, this unit performs command and control of the MILSTAR constellation of satellites. Nearly 60% of the unit's assigned strength of 53 is full-time. The 153<sup>rd</sup> Command and Control Squadron (CACS), located at FE Warren AFB in Cheyenne, WY, is a Mobile Consolidated Command Center (MCCC). The 153<sup>rd</sup> CACS maintains the equipment of the MCCC and is deployable in support of national military objectives. Conversion was completed December, 2002. More than 50% of the unit's assigned strength of 165 is full-time. The 213<sup>th</sup> SWS, located at Clear AFS, AK, provides tactical warning and attack assessments of ballistic missile attacks against North America as well as provide space surveillance capabilities using phased-array radars. AFSPC will maintain ownership of the facilities and is funding the billets, however all but two personnel on site will belong to the ANG. This unit's manpower is included in the FY 2004 Program Objective Memorandum and will transition over a 5-year period. Ninety percent of their assigned 94 personnel will be full-time. The 114<sup>th</sup> Space Launch Flight, located at Patrick AFB, FL, provides launch support to the Eastern Launch Range. The 119<sup>th</sup> CACS, located in Knoxville, TN, augments USSPACECOM's Space Operations Center by providing exercise, training, and other Command and Control capabilities.

The ANG is also expanding into the command and control arena due to the newly assigned JSTARS weapon system. This is a long-range, air-to-ground surveillance system designed to locate, classify and track ground targets in all weather conditions. While flying in friendly airspace, the joint Army-Air Force program can look deep behind hostile borders to detect and track ground movements in both forward and rear areas. It has a range of more than 150 miles (250 km). These capabilities make JSTARS effective for dealing with any contingency, whether actual or impending military aggression, international treaty verification, or border violation. All E-8C aircraft transferred to the ANG on 1 Oct 2002 and reside with the 116<sup>th</sup> Air Control Wing (ACW), Robins AFB, GA. Current forecasts are for long-term end strength of 19 JSTARS aircraft; however, this is beyond the Future Years Defense Plan and therefore planning is for 17 aircraft only.

The ANG continues to aggressively expand its efforts in the Information Operations (IO) and Information Warfare (IW) arena with the creation of several specialized units. The Washington ANG activated the 262<sup>nd</sup> Information Warfare Aggressor Squadron to support the Air Force Information Warfare Center (AFIWC). The Kansas ANG will stand up a similar unit at McConnell AFB. In Maryland, the ANG is teaming with the National Security Agency (NSA) to activate the 175<sup>th</sup> Information Operations Squadron (IOS) in support of NSA and NCA requirements. The Vermont Information Operations Training and Development Center is conducting a proof of concept to support the 39<sup>th</sup> IOS, the Air Force's IO schoolhouse. The Rhode Island and Delaware ANG are currently engaged with the Defense Information Systems Agency and the Information Operations Technology Center, respectively, to provide Joint IO support under the RCE-05 JRVIO initiative. The Utah ANG is building an information warfare flight to provide reach back IW planning and execution capabilities to the Air Operations Center at Headquarters, First Air Force. The Texas ANG has teamed with AFIWC to enhance its ability to meet critical IW requirements. The 193<sup>rd</sup> Special Operations Wing, PA ANG, continues to perform the COMMANDO SOLO psychological operations broadcasting mission with its EC-130 aircraft. Over a dozen other states have also expressed interest in assuming IW missions. Because of the unique and dynamic nature of this mission area, ANG units activated to support IO/IW requirements will require extensive, state-of-the-art computer, networking and telecommunications equipment, with a higher than normal technology refresh rate.

Although primarily manned by the ARNG, Weapons of Mass Destruction (WMD) Civil Support Teams (CST) are augmented by ANG personnel as part of the Homeland Defense mission. The 27 WMD CSTs were established in 26 states to deploy rapidly to assist a local incident commander in determining the nature and extent of an attack or incident; provide expert technical advice on WMD response operations; and help identify and support the arrival of follow-on state and federal military response assets. Each team consists of 22 highly skilled, full-time members of the ARNG and ANG.

The FL ANG has established an Associate Unit at Tyndall AFB, FL, to provide flight instructors for Air Education and Training Command's F-15C/D FTU, designated Detachment 1, Southeast Air Defense Sector. This is the only associate unit in the ANG.

The ANG requires the development and deployment of a comprehensive and contiguous synthetic battlespace generation simulation. This future mission growth requirement will enable the ANG to train its warfighters in the threatening environments which they are expected to face now and in the future. As such, sufficient funds are needed to procure the range infrastructure necessary to deploy the Force Operational Readiness and Combat Effectiveness Simulation to each of the ANG's Combat Readiness Training Centers. The required range infrastructure improvements, estimated at \$2M, will enable these ANG training assets to expand the battle sphere with inclusion of active data link radios and a constructive battlespace that includes all aspects of the joint environment into which ANG warfighters must be prepared to deploy and employ. This deployment effort works in harmony with the USAF Distributed Mission Training (DMT) initiative to distribute enhanced training to the warfighter at home station.

2. Electronic Warfare: Near term priorities include sustainment and modernization of electronic attack pods and support equipment, increased situational awareness through improved radar warning receivers, procuring covert countermeasures, integrating self protection systems, and reestablishing an Air Force electronic attack capability.

a. Electronic Attack (aircraft self protection): The ALQ-131 Block II and ALQ-184 electronic attack pods are used on over 1300 F-16, A-10, and C-130 aircraft. These pods are the primary protection the aircraft have against radar guided, air-to-air missile systems. Developed many years ago, both are now experiencing numerous reliability, maintainability and operational shortfalls. The Air Force has budgeted for a pod improvement program that includes new processors and 1553 data bus communications interfaces for both the ALQ-131 and ALQ-184. Other modifications on the pod improvement roadmap, such as adding digital radio frequency memory, improving receivers, replacing traveling wave tube, and replacing high voltage power supplies, remain unfunded. Upgraded pod-based systems that meet the warfighter's requirements and are easily moved between aircraft will provide the flexibility and reduced logistics footprint needed for future AEF deployments.

b. Destruction of Enemy Air Defenses: At exercise JEFX '02, a capability to greatly enhance the kill-chain timeline was demonstrated using a modified ALQ-131 called Vulture. An F-16 Block 25/30 aircraft equipped with SADL, Litening II targeting pods, CMS and Vulture, successfully demonstrated time sensitive, accurate geolocation of targets and successful SADL transmissions to other systems to destroy the target. While budgets remain tight, the ANG believes that Vulture should be pursued aggressively as a near-term kill-chain enhancement until other capabilities are fielded in the coming years.

c. Radar Warning Receivers (RWR): The ALR-69 RWR is fielded on most ANG F-16, A-10 and C-130 aircraft. The current ALR-69 system uses *circa* 1974 technology and was initially installed on Air Force aircraft in 1978. Several modifications have been accomplished over the 25-year life of the current ALR-69(V). Based on a multi-command Operational Requirements Document, the Air Force is developing the ALR-69 Capability Upgrade which implements advanced RWR capabilities through the development/incorporation of state of the art digital receiver technologies and special detection/geolocation processing algorithms. Currently the Air Force Special Operations aircraft are budgeted for production of this upgrade. F-16, A-10 and the rest of the ALR-69 fleet need to be funded and equipped with this important capability upgrade.

d. Infrared Countermeasures (IRCM) and Dispensers: Most ANG aircraft require a capability to defeat IR-guided missiles. Until missile warning technology is ready for EMD on fighter aircraft so countermeasures can be reliably dispensed reactively, preemptive covert IRCM is needed. The ANG has been on the leading edge of demonstrating and procuring preemptive covert IRCM capabilities for our fighter aircraft. With funds provided by Congress in FY 2001, the Air Force is

procuring the BOL countermeasures system for 118 F-15 A/B aircraft. The A-10, due to some of its unique capabilities, missions and flight profiles, requires longer preemptive coverage than the F-15. Under the sponsorship of ACC, the ANG and AATC have been actively testing and demonstrating the COMET IRCM system for ACC. Based on testing to date, COMET needs to be matured and fielded as soon as possible on the A-10. ANG airlift aircraft, such as the C-130 and C-141, are already equipped or being equipped with missile warning systems and IRCM. But the dispensing of IRCM, covert or otherwise, is not always effective due to aircraft size, proximity to the threat or artificial constraints (e.g. diplomatic agreements or fire hazards). Hence, the USAF requires a laser-based countermeasure for these aircraft in the future. Due to funding constraints, the ANG aircraft will continue to have challenges obtaining these important capabilities.

3. Simulators: In FY 2001, the ANG initiated an ambitious program to modernize the legacy simulators possessed by F-16, A-10 and F-15 units. Using multiple acquisition and business strategies to mitigate risk, the goal is to deploy low-cost, high fidelity, flight simulators that are fully capable of DMT and completely interoperable with the devices being fielded by ACC and other major commands. DMT capable devices will not only be able to train combat ready aircrews in individual skills, but also in team training in a multi-aircraft environment linked locally or, via long haul networking, to other units. By employing common components in hardware and software, the ANG hopes to achieve economy of scale savings in acquisition and life cycle support. Using an Intra Governmental Solution (IGS), which partners government, industry, and research centers, innovative technology developments will provide a new level in aircrew training. The first devices were fielded to A-10 units in FY 2001 with F-16 Block 30 and F-15C devices planned for FY 2003. Other ANG weapons systems will be included in the IGS as the program expands and matures.

The ANG is currently funding several Advanced Technology Demonstrations as engineering proof of concepts to validate new technology applications for existing aircraft flight simulators as a cost saving acquisition strategy.

The JSTARS program has validated requirements for a second Weapons System Trainer (WST) and a second Maintenance and Mission Trainer (MMT). Both of these simulators must be fully funded and delivered as early as possible to support conversion training and sustain the JSTARS aircrew force. It was thought that the second WST would be fully funded at \$11M (3600) in FY 2002 but \$4.5M was taken during congressional conferencing. The current funding of \$9M programmed for a second MMT in FY 2004/05 is not sufficient as the estimated cost for this simulator is \$32M (3010) to provide a full up capability and additional funding is needed in FY 2002/03. Other future aircraft modifications include GATM and to replace the Class 2 JTIDS with MP-CDL in the FY 2005-06 timeframe. The aircraft still have the original engines, leaving the aircraft underpowered and unable to operate at altitudes required for the mission.

The ANG continues to work closely with ACC to develop DMT capability for C2. We contributed \$500,000 to a joint effort to develop a DMT system to train Air Battle

Managers. This system will allow training on a PC level and will free scarce deployable equipment for war tasking.

The Command and Control Weapon System Part Task Trainer (C2WSPTT) provides inputs to Theater Battle Management Core System (TBMCS) to provide stand alone training capability for Air Operations Center (AOC) crew members. C2WSPTT provides the stimulation needed by the ANG AOC augmentation units to conduct operations training and maintain crew readiness. The system simulates TBMCS by providing realistic feeds such as data links and IRIS messages. The system is currently in use at the USAF Command and Control Training and Innovation Group for AOC initial qualification training.

b) Changes Since Last NGRER: There are several significant programmatic changes since the last report. A few new programs have been added (i.e. AFFS to replace MAFFS, leased C-40C, JSTARS), and others expanded (i.e. SADL, DMT training). New missions have been included (i.e. AFSPC, Information Warfare Squadrons, etc.) but the underlying equipping philosophy of the ANG has not changed.

Due to limited precision attack capability, the ANG's participation in Bosnia and Kosovo combat operations was reduced. One approach to fix this problem is an aggressive effort to equip ANG Block 30 F-16s with precision targeting pods. There are currently 64 Litening II pods in service with a total end-state requirement of 160 ANG pods. Recently, the Advanced Targeting Pod (ATP) was selected as the total force approach to modernize the CAF.

The FY 2004 NGRER addresses the need for fielding upgraded and modernized flight simulators with DMT capability at Interim Regional Training Centers and the expanding cooperative role with the AFRC.

This year's NGRER addresses the ANG's ongoing initiatives to expand its role in Space and Information Operations Warfare.

The ANG will no longer be operating a B-1 aircraft bomber mission. The two units flying the aircraft, the 116<sup>th</sup> Wing at Robins AFB, GA, and the 184<sup>th</sup> Wing at McConnell AFB, KS, are transitioning to the E-8C and KC-135R, respectively.

c) Future Years Program (FY 2004 – FY 2006)

(1) FY 2006 Equipment Requirements: There are a total of 104 ANG medical squadrons. The paragraphs below detail the major equipment shortages directly impacting on the Guard's Homeland Defense Mission.

The ANG Medical Service requires \$59.5M to purchase 17 Chemically Protected Expeditionary Medical Support 25 bed (CP- EMEDS +25) non-War Reserve Materiel (WRM) assemblages. The ten Federal Emergency Medical Agency (FEMA) regions have ANG medical personnel already configured to provide CP-EMEDS +25 equivalent



capability. One CP-EMEDS +25 assemblage will be placed in each FEMA region (10). One additional assemblage will be placed in each "*high risk*" FEMA region (6). One additional CP-EMEDS +25 assemblage is required as a mobile training set. During the consequence management phase, these assemblages provide critical care capability during a WMD event. These teams and assemblages are capable of responding in support of either a State or Federal response. Each CP-EMEDS +25 costs \$3.5M.

The ANG Medical Service also requires \$1.0M to purchase ten Bioenvironmental Engineering Nuclear/Biological/Chemical (BNBC) assemblages. These assets provide the required materiel to support ten Bioenvironmental Nuclear, Biological, and Chemical Medical Defense Teams (FFGL1). Each FEMA Region has ANG personnel already trained to provide FFGL1 equivalent capability, but lack available equipment. These non-WRM assemblages will support consequence management of WMD events through NBC detection, assessment, and countermeasure strategies. These teams are capable of responding in support of either a State or Federal response and can complement and expand the capability of the existing NGB CSTs. Each BNBC assemblage costs \$100 thousand.

The ANG Medical Service requires an additional \$3.4M to purchase 20 Patient Decontamination assemblages. These assets provide required materiel to support 20 Patient Decontamination Teams (FFGLB). Each FEMA Region has ANG personnel already trained to provide two FFGLB equivalent capabilities, but lack available equipment. These assemblages will support consequence management of WMD events through expansion of local patient decontamination capability and support to aeromedical evacuation of contaminated casualties. These teams are capable of responding in support of either a State or Federal response. Each assemblage costs \$170K.

The ANG F-16 fleet expects continued modernization in FY 2005 and beyond. Enhancements include the APG-68(V)9 radar, digital recorders, the JHMCS, ALR-69 PLAID and advanced simulators. Structural modifications will remain an issue as we fly our jets well beyond the initially designed lifetime.

(2) Anticipated New Equipment Procurements: Funding for procurement of major items of ANG combat and direct combat support equipment is programmed by the AC (to include the needs of the ANG) as required to meet planned total force employment plans. The Congress, in their annual budget appropriation, may also direct additional ANG equipment procurements through NGREA.

Anticipated additions include additional C-40C replacement aircraft for the retiring C-22s.

Other ANG procurements are expected to include completion of the installation of the FDL and the purchase of an advanced IFF/AAI system for F-15s.

Three new CC-130J aircraft have been fielded at the 143<sup>rd</sup> AW, Quonset Point, RI, and two CC-130J have been fielded for the 146<sup>th</sup> AWG, Channel Islands, CA. Five EC-130Js will be procured for the 193<sup>rd</sup> SOW, Harrisburg, PA.

For the F-16, 64 Litening II targeting pods are in service and additional funds are needed to purchase the ATP. In concert with the AC, ATP procurement will round out the 160 pod ANG requirement. When upgraded with GPS, CMS, NVIS, and SADL under the CUPID program, these aircraft will be as capable as any other F-16 in the USAF inventory. Additional unfunded modernization programs include the HUD AEU, Advanced IFF, Color displays, Mil Std 1760 wiring, and the JHMCS. Upgrade of TARS with a minimum of two EO and two SAR pods and one ground station is anticipated to permit the Air Force to evaluate the ability of this system to support a real-time targeting environment.

KC-135E engine replacement upgrades will also continue as funding permits, following a Congressionally-directed engine replacement program review. One hundred-sixteen (116) KC-135D/Es remain to be upgraded to the KC-135R standard.

The C-17 is the future core airlifter, replacing the retiring C-141. The C-17 provides strategic delivery of cargo, passengers, and patients via airland and airdrop from the CONUS direct to main operating bases or forward operating locations. On 3 Nov 1995, in conjunction with the Defense Acquisition Board's announcement to buy an additional 80 C-17s (120 total), CSAF announced the 172<sup>nd</sup> AW in Jackson, MS, would receive 6 of these aircraft. During the FY 2003 APOM, CSAF approved funding to procure and support 60 additional C-17s (180 total). AMC basing plan provides an 8 PAA unit-equipped follow-on mission for Jackson, replacing their retiring 8 C-141Cs. Jackson is currently the only ANG base identified for conversion to this weapon system, although several other units, to include existing C-130 bases, are exploring the possibility. Transition begins FY 2004/2, to be complete FY 2004/4.



C-17

The ANG anticipates procuring two (2) additional JSTARS platforms to meet mission needs. Additional aircraft to complete the fleet of 17 aircraft will be procured as additional funding is appropriated.

(3) Anticipated Transfers from AC to RC: The F-15C/D is expected to begin transition from the AC to the ANG combat-coded squadrons starting in FY 2004 and extending into FY 2013. Two AC F-16C Block 30 squadrons-worth of aircraft are expected to begin transfer to ANG units during FY 2003. This in turn will begin the transfer of the remaining combat coded F-16A/B aircraft to FMS training or retirement. Additional KC-135R models may be transferred to replace older D/E aircraft. E8-C JSTARS aircraft transitioned to the Guard beginning on 1 October 2002.

(4) Anticipated Withdrawals from RC Inventory: Due to aircraft age and cost to address GATM requirements for worldwide operations, the three C-22s assigned to the 201<sup>st</sup> AS, DC ANG, at Andrews AFB, are being retired. The first aircraft left the inventory in November 2001. The remaining aircraft are scheduled to leave the inventory in December 2002 and December 2003. The replacement aircraft is the C-40C. Additional aircraft to complete the fleet will be procured as additional funding is appropriated.

AMC identified a core of 62 ARC C-141C aircraft that will remain in the inventory as an integral part of the strategic airlift forces through FY 2006 until the C-17 is fully fielded. The core 62 aircraft, including National Guard and Reserve aircraft, received four modifications required to maintain viability until the C-17 transition is complete. C-141s are tentatively scheduled to leave the ANG beginning in FY 2003.

(5) Remaining Equipment Shortages and Modernization Shortfalls at the end of FY 2006: The most significant challenge to ANG readiness is that of equipment. The ANG has the oldest aircraft in the USAF inventory. Modernization of the fleet to attain equivalent capability and meet the warfighting Combatant Commander taskings is critical to a robust and lethal Total Force. Additional details are provided in the following paragraphs.

The A/OA-10 Precision Engagement (PE) Program will replace the armament control panel/interstation control unit with a digital control mechanism and a MIL STD1760 bus interface which will allow targeting pod employment of precision guided munitions. In addition, the A/OA-10 cockpit will contain color multi-function displays, a tactical data link, and a Hands-On-Throttle-And-Stick to minimize the pilot's concentration focused within the cockpit.

The location of the current antenna installations for the ALR-69 radar warning receivers (RWR) on A-10 and F-16 aircraft provide late warnings of modern air-to-air and surface-to-air threats. Modifications to correct this sensitivity problem have been developed but only partially funded for 274 out of 444 F-16 Block 25/30/42s. One hundred-seventy (170) ANG F-16s still require this change, and 102 ANG A-10s must be modernized.

The JHMCS is a state of the art capability to cue and verify cueing of off-boresight sensors and weapons, including radar, navigation system, and both current and next generation short range missiles. The helmet provides capability for weapons employment to achieve first look, first shot advantage in the air-to-air within visual range combat arena, and provides radar weapon symbology and visual cues of target location. The system will be compatible with F-15 and F-16 aircraft and will ensure the viability of ANG aircraft for the future.

The F-16 CUPID upgrade for Block 25/30/32 aircraft provides for SADL; however, it does not provide an upgraded color display capability. The addition of the Advanced

Display Processor and Color Display configuration optimizes utilization, increases aircraft processing capability, pilot situational awareness, and combat survivability and lethality. Four hundred forty-six (446) color display sets and processors are required.

The Pylon Integrated Dispenser System (PIDS) universal modification for the ANG's 242 F-16 Block 25/30/32 aircraft has significantly increased their countermeasures self-protection capability. The Air National Guard and Air Force Reserve together own 310 PIDS. A PIDS universal update to include a smart weapons interface is now required so the PIDS can carry smart weapons like JDAM.

The HUD AEU upgrade is a crucial upgrade to support the F-16 Block 30 fleet in the future. Originally developed in the late 1970s, the processor of the current HUD AEU is limited and does not meet the required throughput speed necessary to keep pace with the replacement of other avionics. Additionally, the current HUD AEU is adversely affected with diminishing manufacturing sources. A replacement unit is needed to provide necessary memory and processor power to take Block 30 F-16s out to the 2015 timeframe.

In FY 2003, the ANG worked an initiative to equip 30 F-16 aircraft with IFF interrogation capability. The ANG-16 Block 30 fleet consists of multi-role fighters fulfilling Defensive Counter-Air tasking in the EAF as well as Air Defense Force missions in CONUS. The Advanced IFF provides the F-16 Block 30 fleet with an essential ability to identify friendly aircraft when employing beyond visual range weapon systems, thus avoiding "friendly fire" disasters. This modification greatly increases situational awareness and aircraft survivability / viability in multi-role taskings the Combatant Commanders demand.

The ANG Block 42 F-16 aircraft require new engines to increase their thrust in order to perform the multiple combat taskings now being assigned. The simultaneous carriage of both LANTIRN and HTS pods significantly degrades performance of the aircraft with the F-100-PW-200E. A total of 63 new engines, of which fifteen have been funded, are required for the ANG's F-16 Block 42 fleet.

The fielding of the FDL opens many new opportunities for improving the capabilities of the F-15. Effective training of pilots in the use of those expanded capabilities is essential to optimize the F-15's employment. An F-15 Advanced Video Tape Recording is needed to fully capture all the expanded training mission data now derived from addition of the FDL. One hundred twenty-six (126) ANG F-15s require this capability.

The BOL countermeasure dispenser modification for ANG F-15s will allow the carriage of the MJU-52 covert countermeasure and will provide the aircraft exceptional preemptive and reactive protection from infrared guided missile systems. One hundred-eight (108) ANG F-15 aircraft will receive this BOL dispenser. Improvements to enhance the simple F-15 BOL controls interface to the pilot need to be developed.

HC-130 CSAR aircraft need a FLIR to provide the ability to see through smoke, light fog and rain, permitting crews to operate under the worst of conditions. Ten (10) ANG aircraft require this capability. The modification contract was awarded in August, 2002, with expected completion in FY 2004.

The SADL provides an all-weather, low-cost data link using off-the-shelf Enhanced Position Location Reporting System radios and provides a major improvement in preventing fratricide during combat operations. In FY 2003, the ANG will begin to take delivery of the Value Engineering Change Proposal hardware upgrade kit to enhance the SADL's ability to exchange J-Series messages through a gateway to and from a Link 16 network. Two gateways are being fielded to provide this interoperability. The Joint Range Extension (JRE) gateway will embed the Transparent Multi-Platform Gateway (TMPG), designed to translate between the SADL and Link 16. As a component of the GTACS, JRE/TMPG will provide a ground-based capability. The Roll-on Beyond-Line-of-Sight Enhancement is a palletized collection of radios designed to provide an airborne gateway capability on any aircraft on which a pallet is compatible. The Smart Tanker program calls for modifying 40 KC-135s and buying 20 pallets for use across the CAF. Tactical data links are needed for 95 ANG HH-60s, and 25 HC-130s. The ANG needs equivalent connectivity to the tactical data link networks across the mission areas to ensure relevancy in the modern battlefields and airspace. The ANG will continue to leverage any Air Force and Joint programs necessary to obtain this combat capability. ANG ranges require 15 SADLs to provide aircrew training.

NVGs provide C-130 aircrews with situational awareness, turn point, landing and drop zone identification, formation positioning and deconfliction, and integration in nighttime battlespace. NVGs are a Combatant Commander requirement for 24-hour operations. Ten (10) ANG C-130 units do not have NVGs and the required support equipment. Four hundred (400) sets are required.

To support the optimized capability of NVGs, a fully NVIS compatible cockpit is required. While most of the newer C-130 aircraft are NVIS compatible, the ANG's C-130E and C-130H2 aircraft are not. While the ANG's C-130E aircraft will eventually be replaced by newer C-130Js, NVIS compatible cockpit lighting is required for 104 ANG C-130H2 aircraft. A limited NVIS compatible lighting modification is being fielded, with a more complete solution still required.

International airspace management reduced VHF radio channel spacing to create additional frequencies for voice communications between air traffic control and aircraft. This change affects all aircraft operating at altitudes above 24,500 feet. The ANG's 18 C-141s routinely operate in this high altitude environment and must have the 8.33Mhz channel spacing VHF radios.

Tactical Digital Information Link-J (TADIL-J) / North Atlantic Treaty Organization Link-16 is the primary tactical data link for joint military operations. Most tactical command and control units and fighter aircraft have some TADIL-J capability. As further installations continue, any system not equipped to pass J Series messages will be

irrelevant to future joint operations. Of particular note is the current J Series message shortfall found at the air defense sectors. The ANG continues to request NORAD and 1<sup>st</sup> AF address this shortfall especially in light of the on-going Operation NOBLE EAGLE. ANG Ranges must have access to TADIL-J to provide aircrew training.

The HC-130 Integrated Countermeasures System merges inputs from the Missile Warning System, Countermeasures Dispensing System, and RWRs to simplify operations, relieve reliance on a human interface, and defeat threats to the aircraft. The ANG requires the upgrade of thirteen (13) HC-130 aircraft.

C-130Js are being provided as replacements for aging C-130 aircraft currently in use by the ANG. Three new CC-130J aircraft are under contract and will be delivered with one to the 143<sup>rd</sup> AW, Quonset Point, RI, and two to the 146<sup>th</sup> AW, Channel Islands, CA. However, this will result in a mixed unit of four CC-130Js and four C-130Es at the 143<sup>rd</sup>, and four CC-130Js and 8 C-130Es at the 146<sup>th</sup>. The C-130Es require replacement with CC-130Js to simplify maintenance, training, logistics support, and manpower.

In a congressionally-directed program, aging EC-130Es are being replaced with new EC-130Js, with the current mission equipment suite being moved from the old aircraft to the new models. Five aircraft have been funded for delivery to the 193<sup>rd</sup> SOW, Harrisburg, PA. Three additional aircraft are needed to complete the unit's conversion and prevent leaving the unit with a mixed fleet of E and J model aircraft.

The 17 JSTARS aircraft still have their original engines, leaving the aircraft underpowered and unable to operate at altitudes required for the mission. Current planning involves a lease or buy approach utilizing the Pratt and Whitney JT8D-219 engine.

The HH-60 is particularly vulnerable to shoulder fired missiles because of the low altitudes and relatively low airspeeds at which it routinely conducts its missions. The HH-60 SPS provides a limited capability now and is currently being fielded. The ANG requires a total of 18 HH-60s to be equipped with SPS. Two of three ANG squadrons will be completed during FY 2003. We are continuing developmental work on a frequency selective radar warning receiver.

Two additional C-38A aircraft are required to complete the fleet of four aircraft at Andrews AFB, MD. These ANG aircraft support Congressional, Executive Branch, DOD, USAF and National Guard travel missions worldwide. The additional aircraft are required to fulfill the numerous small load taskings received, and take advantage of scheduling, training, and aircraft reserve efficiencies that four aircraft provide over two.

The AN/MPN-14K radar, presently being used by the ANG, attained its IOC in the 1950s, and although there have been some upgrades to the MPN-14K through the years, there are currently no spare parts remaining to replace failing equipment. Efforts to implement a replacement program have been slow and as yet not fully successful.

The upgrade of F-16 TARS with the Airborne Information Transfer data link and night, through-the-weather capability provides a unique near real-time targeting capability on the only high-speed penetrating platform in the Air Force. The ability of this data link to extend the range for real-time targeting by hundreds of miles when used with airborne relays is unique in the Air Force and DOD inventory. Current funding only provides for upgrade of a limited number of pods. Upgrade of the remaining assets is needed to fully support Air Force requirements for rapid NRT of mobile/re-locatable targets.

Fire vehicle replacements are a continuing problem for the ANG. With fire protection requirements at all our 88 flying units and concurrent responsibility on 44 civilian airfields, it is imperative that all fire departments have dependable response vehicles. At most locations the fire trucks and rescue vehicles have exceeded their expected life by many years. Vehicles are failing at an increasing rate with little hope of replacements in the near term. The total cost to replace the 170 fire trucks would be in excess of \$60M. A budget line of \$15M per year would provide replacement and sustainment of the ANG fire fleet. The current budget, however, includes less than \$2M per year. In addition to putting our aircrews and aircraft at risk, we may soon routinely violate Federal Aviation Administration prescribed requirements at civilian airports where we are contractually obligated to provide such service.

The ANG operates the Regional Equipment Operators Training Site at Fort Indiantown Gap, PA, on behalf of the total force. This site provides hands-on training for heavy equipment operators (bulldozers, graders, excavators, front end loaders, etc.). This equipment is critical to the engineering beddown capability, but is too expensive to maintain at each unit for training purposes. This school is the only USAF location that can provide the wartime skills training our forces need. The current equipment at the school is well beyond its economic life and is in dire need of replacement. It is a very low priority within ANG and USAF budget lines and the \$12M requirement is not currently funded. The lack of new equipment may require the school to terminate courses and leave the Air Force with no viable training alternative for these wartime skills.

Prior to September 11, 2001, there was a renewed emphasis on NBC programs. The policy decision to put all personnel in a mobility status drives a large bill for chemical suits and protective equipment. The current budget shortfall for the ANG in this program is roughly \$60M. New policy with regard to homeland defense in a post September 11<sup>th</sup> world will create even more equipment requirements for protection of facilities and personnel. While the specific concept of operations has not been determined and there is no budget line for the requirements yet, this is an area of concern that will require priority funding in the near future.

The ANG Transportation section (ANG/LGT) requires \$8.5M to replace our aging High Mobility Multi-Purpose Wheeled Vehicles (HMMWV). The ANG is authorized 413 HMMWVs with only 400 assigned of which 138 need to be replaced. With limited funding for replacement vehicles Air Force-wide, the ANG is not expected to reach its

authorized total throughout the FYDP, and the fleet will continue to age due to obsolescence.

Also, \$16.5M is needed to replace 40 aging 25K Loaders. The ANG has 52 (25K) Material Handling Loaders authorized with 48 on hand and 4 assigned as substitutes. The average age of our 25K Loaders is 17 years. The ANG received 4 of the new Halvorsen Next Generation Small Loaders in FY 2002 for the Combat Readiness Training Center. With limited funding it will be some time before the ANG can replace and modernize its fleet of 25K Loaders.

The ANG Medical Service requires \$59.5M to purchase 17 Chemically Protected Expeditionary Medical Support 25 bed (CP- EMEDS +25) non-War Reserve Materiel (WRM) assemblages, one each to be provided to the ten Federal Emergency Medical Agency (FEMA) regions. One additional assemblage will be placed in each "*high risk*" FEMA region (6), and one is required as a mobile training set. These teams and assemblages are capable of responding in support of either a State or Federal response. Each EMEDS +25 costs \$3.5M.

The ANG Medical Service also requires \$1M to purchase ten Bioenvironmental Engineering Nuclear/Biological/Chemical (BNBC) assemblages to provide materiel to support ten Bioenvironmental Nuclear, Biological, and Chemical Medical Defense Teams (FFGL1). These teams are capable of responding in support of either a State or Federal response and can complement and expand the capability of the existing NGB CSTs. Each BNBC assemblage costs \$100 thousand.

In addition, the ANG requires \$3.4M to purchase 20 Patient Decontamination assemblages. These assets provide required materiel to support 20 Patient Decontamination Teams (FFGLB). Each FEMA Region has ANG personnel already trained to provide two FFGLB equivalent capabilities, but lack available equipment. These assemblages will support consequence management of WMD events through expansion of local patient decontamination capability and support to aeromedical evacuation of contaminated casualties. These teams are capable in responding in support of either a State or Federal response. Each assemblage costs \$170 thousand.

(6) Other Comments: The ANG has successfully leveraged relatively small amounts of NGREA funds into significant enhancements in combat capability by employing innovative modernization business practices. Low cost, high pay-off programs have benefited not only the ANG, but the AC and AFRC as well. By streamlining the acquisition and RDT&E processes, the ANG has provided the aircrew with more capable systems, faster, and at a lower cost. Discretionary NGREA procurement funds have provided dramatic combat capability enhancements for the warfighter.

While basically ready for low intensity or limited conflicts, lack of full CQ capability throughout the ANG fighter fleet will limit full participation in theater



Combatant Commander directed combat operations. In addition, lack of GATM compliance will significantly impact future mobility operations worldwide.

The ANG expects that EC/CC-130J aircraft procurement will continue to be directed at a low rate through FY 2008, eventually replacing ANG C-130Es. The 172<sup>nd</sup> AW is slated to receive six (6) C-17 aircraft with the first delivery in May 2004.

*Table 8* highlights the ANG's major item unfunded requirements identified within the CQ. The list is compiled from mission priorities established through a formal process that identifies requirements at the unit level and translates that need into a total package. ANG and AFRC Unit Weapons and Tactics Officers jointly conduct a conference each fall to assess the current state of modernization efforts and establish a priority ranking of programs by weapon system. The ANG Air and Space Operations Directorate (ANG/XO), Requirements Division (ANG/XOR) is responsible for developing this priority list, in coordination with other MAJCOMs, Air Staff, Joint Staff, OSD, and the Congress, to ensure all of the ANG requirements identified in the FYDP are addressed in the funding process. Modernization requirements not included in the President's Budget Estimate Submission are identified as unfunded priorities. *Table 8* reflects the ANG's **best** estimate of the critical priorities that are not likely to receive funding.

d) Summary and Conclusions: The ANG currently bases its needs on requirements necessary to meet Combatant Commander and AEF guidelines for fighting and combat support forces. These requirements are embodied in the CQ, which calls for a 24-hour operational capability, survivability in a high threat environment, a combat identification capability, and a precision attack capability. ANG's logistics and ground support elements are considered early-on in the acquisition process, and all its efforts are targeted at remaining well trained, prepared to react, and ready to respond to any contingency at home or anywhere in the world.

Equal in importance to capability is accessibility of the Air Guard. Recent events have highlighted the Guard's ability to respond to any short notice tasking, any where in the world, with fully combat trained professionals equipped with modern weapon systems.

The overarching objective of the ANG, as part of the Total Force, is to optimize and supplement active component lead command modernization funding, when necessary; to field equivalent **and relevant** capabilities in each of the major weapons systems; and to streamline the infrastructure and simplify the deployment requirements to make the interchange and interoperability of units more flexible. The USAF budgeting and planning process must be structured to project an equipping and funding philosophy reflecting this future of the Total Force.

## Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	EQUIP No.	Beginning FY 2004 COST	Beginning FY 2004 QTY O/H	Beginning FY 2005 QTY O/H	Beginning FY 2006 QTY O/H	Ending FY 2006	Ending FY 2006 QTY
<b>AIR REFUELING</b>							
AIR REFUELING, KC-135D/E	KC-135D/E	44,000,000	118	118	118	118	118
AIR REFUELING, KC-135R	KC-135R	57,690,000	105	105	105	105	105
<b>AIR SUPPORT</b>							
AIR SPT, OA-10A	OA-010A	10,900,000	18	18	18	18	18
<b>AIRLIFT</b>							
AIRLIFT, C-130E	C-130E	13,240,000	62	59	52	26	26
AIRLIFT, C-130H	C-130H	33,500,000	147	147	147	147	147
AIRLIFT, C-130J	C-130J	53,900,000	13	16	19	23	26
AIRLIFT, C-141C	C-141C	47,180,000	15	0	0	0	0
AIRLIFT, C-17A	C-017A	184,000,000	0	0	8	8	8
AIRLIFT, C-5A	C-005A	169,960,000	12	12	12	12	12
AIRLIFT, LC-130H <sup>1</sup>	LC-130H	59,300,000	11	11	11	11	11
<b>ELECTRONIC WARFARE</b>							
EL WARFARE, E8-C	E-008C	250,000,000	14	15	17	17	19
EL WARFARE, EC-130E	EC-130E	30,040,000	2	1	1	0	0
EL WARFARE, EC-130J	EC-130J	86,500,000	6	7	8	8	8
<b>FIGHTER</b>							
FIGHTER, A-10A	A-010A	10,900,000	84	84	84	84	84
FIGHTER, F-15A	F-015A	31,040,000	82	83	83	83	83
FIGHTER, F-15B	F-015B	31,040,000	16	16	16	16	16
FIGHTER, F-15C	F-015C	33,240,000	13	31	52	52	52
FIGHTER, F-15D	F-015D	33,240,000	2	4	7	7	7
FIGHTER, F-16A	F-016A	16,150,000	25	25	25	25	25
FIGHTER, F-16B	F-016B	16,150,000	15	15	16	16	16
FIGHTER, F-16C	F-016C	20,910,000	442	438	423	432	432
FIGHTER, F-16D	F-016D	20,910,000	41	43	43	43	43
<b>OPERATIONAL SUPPORT</b>							
OPS SPT, C-21A	C-021A	3,690,000	2	2	2	2	2
OPS SPT, C-22B	C-022B	18,560,000	1	0	0	0	0
OPS SPT, C-26B	C-026B	4,670,000	11	11	11	11	11
OPS SPT, C-38A <sup>2</sup>	C-038A	18,000,000	2	2	2	2	4
OPS SPT, C-40C <sup>3,4</sup>	C-040C	62,500,000	2	3	3	3	4
<b>RESCUE</b>							
RESCUE, HC-130E/H	HC-130E/H	13,360,000	5	5	5	5	6
RESCUE, HC-130N/P	HC-130N/P	20,500,000	5	5	5	5	5
RESCUE, HH-60G	HH-060G	17,600,000	18	18	18	18	18
RESCUE, MC-130P	MC-130P	33,400,000	4	4	4	4	4
Total			843	851	875	887	896
Note 1 - 4 NSF owned LC-130Hs are operated by the 109th AW.							
Note 2 - The requirement for two additional C-38A aircraft is immediate but funding is unavailable.							
Note 3 - C-40C is the planned replacement for the C-22B which is being phased out of the inventory.							
Note 4 - C-40Cs are being leased at an annual cost of \$12,000,000.							
Data provided by SAF/FMC, ANG/XP and ANG/XO							

**ANG**  
**Average Age of Equipment**

Table 2

<i>NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for fiscal year (FY) 2004.</i>			
<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>AVERAGE AGE</b>	<b>REMARKS</b>
<b>AIR REFUELING</b>			
AIR REFUELING,KC-135E	KC-135E	44.5	
AIR REFUELING,KC-135R	KC-135R	42.3	
AIR REFULEING,KC-135D	KC-135D	37.9	4 Aircraft total, all 1963 models
<b>AIR SUPPORT</b>			
AIR SPT,OA-10A	OA-010A	22.9	
<b>AIRLIFT</b>			
AIRLIFT,C-130E	C-130E	40.0	
AIRLIFT,C-130H	C-130H	14.5	Includes C-130H-1, H-2, and H-3
AIRLIFT,C-130J	C-130J	2.6	
AIRLIFT,C-141C	C-141C	37.3	9 aircraft retiring in FY 03
AIRLIFT,C-17A	C-017A	0.0	Projected delivery of first C-17 May 2004
AIRLIFT,C-5A	C-005A	32.4	
AIRLIFT,LC-130H	LC-130H	12.9	
<b>ELECTRONIC WARFARE</b>			
EL WARFARE,E8-C	E-008C	3.3	Note 1
EL WARFARE,EC-130E	EC-130E	39.6	
EL WARFARE,EC-130J	EC-130J	1.5	
<b>FIGHTER</b>			
FIGHTER,A-10A	A-010A	22.8	
FIGHTER,F-15A	F-015A	25.5	
FIGHTER,F-15B	F-015B	25.9	
FIGHTER,F-15C	F-015C	22.2	
FIGHTER,F-15D	F-015D	23.4	
FIGHTER,F-16A	F-016A	20.5	
FIGHTER,F-16B	F-016B	20.8	
FIGHTER,F-16C	F-016C	15.5	
FIGHTER,F-16D	F-016D	14.3	
<b>OPERATIONAL SUPPORT</b>			
OPS SPT,C-21A	C-021A	16.0	
OPS SPT,C-22B	C-022B	18.7	
OPS SPT,C-26B	C-26B	9.3	
OPS SPT,C-38A	C-38A	5.5	
OPS SPT,C-40B	C-40B	1.0	
<b>RESCUE</b>			
RESCUE,HC-130N	HC-130N	9.7	
RESCUE,HC-130P	HC-130P	37.3	
RESCUE,HH-60G	HH-060G	12.8	
RESCUE,MC-130P	MC-130P	36.9	
Weighted average age of all aircraft:		22.7	
Note 1. Avg. airframe age of recycled Boeing 707s is 34 years.			
Data provided by: AF/XPPE and ANG/LGMF			

**ANG**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.*  
*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>TACTICAL AIRCRAFT</b>				
A-10	3,600,000	13,100,000	12,400,000	
F-15	5,200,000	300,000	2,400,000	
F-16	69,200,000	55,500,000	65,700,000	
<b>AIRLIFT AIRCRAFT</b>				
C-5	11,600,000	11,600,000	50,900,000	
C-17A	0	0	300,000	
<b>OTHER AIRCRAFT</b>				
C-130	33,400,000	22,200,000	88,700,000	
C130J MODS	3,300,000	12,800,000	0	
C-135	109,600,000	29,400,000	54,200,000	
DARP	8,600,000	3,400,000	0	
H-60	9,300,000	26,200,000	4,300,000	
OTHER AIRCRAFT	1,500,000	700,000	0	
<b>COMMON SUPPORT EQUIPMENT</b>				
COMMON SUPPORT EQUIPMENT	49,968,000	36,396,000	34,412,000	
<b>CARGO + UTILITY VEHICLES</b>				
TRUCK, CARGO-UTILITY, 3/4T, 4	4,425,000	4,550,000	2,369,000	
TRUCK, CARGO-UTILITY, 3/4T, 4	0	829,000	825,000	
TRUCK MAINT/UTILITY/DELIVERY	2,340,000	6,040,000	3,190,000	
HIGH MOBILITY VEHICLE (MYP)	3,166,000	3,190,000	3,235,000	
ITEMS LESS THAN \$5,000,000	7,025,000	8,721,000	9,115,000	
<b>SPECIAL PURPOSE VEHICLES</b>				
HMMWV, ARMORED	971,000	152,000	233,000	
HMWWV, UP-ARMORED	0	174,000	368,000	
TRACTOR, A/C TOW, MB-4	914,000	0	0	
TRACTOR, TOW, FLIGHTLINE	6,015,000	1,340,000	2,228,000	
TRUCK HYDRANT FUEL	278,000	426,000	580,000	
ITEMS LESS THAN \$5,000,000	2,165,000	5,758,000	8,715,000	
<b>FIRE FIGHTING EQUIPMENT</b>				
ITEMS LESS THAN \$5,000,000	1,717,000	1,424,000	2,236,000	
<b>MATERIALS HANDLING EQUIPMENT</b>				
TRUCK, F/L 10,000 LB	951,000	3,115,000	1,388,000	
ITEMS LESS THAN \$5,000,000	1,716,000	2,652,000	3,360,000	
<b>BASE MAINTENANCE SUPPORT</b>				
TRUCK, DUMP	0	104,000	213,000	
RUNWAY SNOW REMOVAL & CLEANING	1,812,000	3,021,000	4,764,000	
ITEMS LESS THAN \$5,000,000	3,528,000	6,451,000	10,988,000	
<b>ELECTRONICS PROGRAMS</b>				
AIR TRAFFIC CTRL/LAND SYS (AT)	43,284,000	43,284,000	0	
NATIONAL AIRSPACE SYSTEM	0	0	3,654,000	
THEATER AIR CONTROL SYS IMPRO	1,600,000	2,100,000	1,300,000	
WEATHER OBSERVE/FORECAST	600,000	2,100,000	2,010,000	
<b>SPECIAL COMM-ELECTRONICS PROJECTS</b>				
AF GLOBAL COMMAND & CONTROL S	520,000	525,000	525,000	
COMBAT TRAINING RANGES	1,700,000	1,700,000	1,700,000	
GCSS-AF FOS	500,000	500,000	0	
THEATER BATTLE MGT C2 SYS	500,000	500,000	10,097,000	
<b>AIR FORCE COMMUNICATIONS</b>				
DEFENSE MESSAGE SYSTEM (DMS)	1,125,000	1,125,000	1,125,000	
<b>DISA PROGRAMS</b>				
NAVSTAR GPS SPACE	0	1,380,000	1,900,000	
<b>ORGANIZATION AND BASE</b>				

**ANG**  
**Service Planned Procurements (P-1R Data)**

Table 3

<p><i>NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.</i></p> <p><i>Note: Cost figures are in dollars.</i></p>				
<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
TACTICAL C-E EQUIPMENT	20,000,000	20,000,000	20,000,000	
BASE COMM INFRASTRUCTURE	25,345,000	29,863,000	31,716,000	
ITEMS LESS THAN \$5,000,000	1,508,000	1,508,000	1,508,000	
<b>TEST EQUIPMENT</b>				
BASE/ALC CALIBRATION PACKAGE	624,000	690,000	722,000	
ITEMS LESS THAN \$5,000,000	775,000	791,000	807,000	
<b>PERSONAL SAFETY AND RESCUE EQUIP</b>				
NIGHT VISION GOGGLES	370,000	378,000	385,000	
ITEMS LESS THAN \$5,000,000	1,614,000	1,646,000	1,680,000	
DEPOT PLANT + MATERIALS HANDLING EQ				
MECHANIZED MATERIAL HANDLING	1,375,000	1,560,000	1,200,000	
ITEMS LESS THAN \$5,000,000	2,022,000	2,062,000	2,103,000	
<b>ELECTRICAL EQUIPMENT</b>				
FLOODLIGHTS	187,000	0	0	
ITEMS LESS THAN \$5,000,000	2,437,000	2,486,000	2,535,000	
<b>BASE SUPPORT EQUIPMENT</b>				
PHOTOGRAPHIC EQUIPMENT	350,000	350,000	350,000	
AIR CONDITIONERS	50,000	50,000	50,000	
ITEMS LESS THAN \$5,000,000	4,680,000	4,773,000	4,869,000	
<b>TOTAL:</b>	<b>453,457,000</b>	<b>378,914,000</b>	<b>457,355,000</b>	

## National Guard and Reserve Equipment Appropriation (NGREA) Procurements

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory .*

<i><b>NOMENCLATURE</b></i>	<i><b>FY 2001</b></i>	<i><b>FY 2002</b></i>	<i><b>FY 2003</b></i>	<i><b>REMARKS</b></i>
A-10 IFFCC	2,484,000			A-10 Integrated Flight and Fire Control Computer provides enhanced operational capabilities.
F-16 BLK 25/30 COLOR DISPLAYS	3,970,000			Enhances situational awareness.
ALR-69 ANTENNA OPTIMIZATION (F-16 & A-10)	3,680,000			Enhances ability of the ALR-69 to detect threats.
F-16 ADVANCED TARGETING POD (ATP)	3,564,000			Provides precision targeting capability for the F-16.
HC-130 FLIR	3,800,000			Enhances capability to locate survivors during search operations.
SITUATIONAL DATA LINK (SADL)	2,100,000			42 kits
F-15 ADVANCED VIDEO RECORDING SYSTEM (AVRS)	2,480,000			On-board recording device captures vital in-flight mission information.
F-15 BOL	3,003,000			Infrared counter measure dispenser increases defensive capability with non-visual spectrum flare.
C-130 ARMOR	1,752,000			Armor protects aircrew and vital systems from hostile ground fire.
F-16 PYLON INTEGRATED DISPENSER SYSTEM (PIDS)	2,957,000			Provides increased self-protection and smart weapons capability.
Fighter/Attack aircraft precision strike systems upgrades		3,000,000		Major capability upgrades for precision weapon delivery systems.
Data Link Gateways		3,500,000		Provides full connectivity to the Link 16 network now in place world-wide.
Fighter/Attack and Transport aircraft defensive systems		3,000,000		Upgrades enhance overall deployment ready status.
Rescue and Transport aircraft night vision imaging systems		430,499		Simplifies night operations and improves capability to defeat threats to the aircraft.
Precision Strike			12,000,000	
Enhanced Survivability			8,000,000	
Data Link Combat ID			6,000,000	
24-Hour Operations			3,831,700	
<b>TOTAL</b>	<b>\$29,790,000</b>	<b>\$9,930,499</b>	<b>\$29,831,700</b>	
Note 1 - In the absence of an Appropriation Bill, the data is based upon committee mark ups.				
Data provided by ANG/XO				

### Projected Equipment Transfer/Withdrawal Quantities

Table 5

*NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the ANG once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.*

[illegible]

## FY 2000 Planned vs Actual Procurements and Transfers

NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002. Cost figures are in dollars.

Nomenclature	Equip No.	FY 00 Transfers		FY 00 Procurements		FY 00 NGREA	
		Planned	Actual	Planned	Actual	Planned	Actual
Aircraft Modifications				220,668,000	366,611,000		
Other Production Charges					1,000		
Aircraft Spares/Repair Parts				901,000			
Common Support Equipment				16,304,000	47,866,000		
High Mobility Vehicle (MYP)				5,847,000	5,907,000		
Tractor, Tow, Flightline				732,000	870,000		
Truck, F/L 10,000 Lb				2,768,000	1,152,000		
Truck, Dump				327,000	335,000		
Runway Snow Remove & Cleaning Equip				1,063,000	4,292,000		
COMSEC Equipment				1,750,000			
Intelligence Data Handling Sys				1,400,000			
Intelligence Comm Equip				985,000	976,000		
National Airspace System				2,025,000	1,146,000		
Theater Air Control Sys Improvement				18,017,000	1,705,000		
Weather Observ/Forecast				624,000			
AF Global Command & Control Sys				1,500,000	500,000		
Air Force Physical Security System				1,826,000			
Combat Training Ranges				2,300,000	10,640,000		
Joint Surveillance System				2,871,000			
Base Level Data Auto Program					1,000,000		
Theater Battle Mgt C2 Sys				123,000	1,500,000		
USCENTCOM				200,000			
NAVSTAR GPS Space				241,000	200,000		
Base Comm Infrastructure				23,235,000	23,030,000		
Comm Elect MODS				100,000			
Base/ALC Calibration Package				628,000	580,000		
Night Vision Goggles				106,000	37,000		
Mechanized Material Handling Equip				573,000	1,502,000		
Floodlights				3,060,000	1,675,000		
Base Procured Equipment				4,775,000	8,275,000		
Photographic Equipment				95,000	300,000		
Air Conditioners				690,000	2,479,000		
Items Less Than \$5,000,000				18,387,000	25,262,000		
A-10 CMD						3,940,000	3,940,000
Rescue HC-130 & HH-60 Carry-on SADL						1,350,000	1,350,000
A-10 IFFCC						3,000,000	3,000,000
A-10 SADL						3,050,000	3,050,000
Ground Tactical Air Control Center (TACP) SADL						1,000,000	1,000,000
F-15 Night Vision Imaging System (NVIS)						5,000,000	5,000,000
Gateway/Support SADL (F-16/A-10 & Carry-on SADL)						2,500,000	2,500,000
A-10 ADI Integration						400,000	400,000
F-16/A-10 ALR-69 Antenna Optimization						2,500,000	2,500,000
HC-130 APN 241 Color Radar						4,500,000	4,500,000
A-10 Tail Armor						860,000	860,000
F-16 Block 25/30 Color Displays						600,000	600,000
A-10 PLS/LARS						1,140,000	1,140,000
EL WARFARE, EC-130J						192,000,000	192,000,000
Totals:				334,121,000	507,841,000	221,840,000	221,840,000



**Major Item of Equipment Substitution List**

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.

**NO DATA TO REPORT**

**ANG**  
**Significant Major Item Shortages**

Table 8

*NOTE: This table provides the ANG top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service.*

PR	NOMENCLATURE	TOTAL REQ'D	# UNITS SHORT	UNIT COST	TOTAL SHTG COST	RATIONALE / JUSTIFICATION
1	F-16 PRECISION ATTACK TARGETING PODS	160	96	1,500,000	144,000,000	Provides precision targeting capability for the F-16 with an external pod.
2	F-16C/D COLOR DISPLAYS				65,256,000	
	F-16C	379	379	142,000		Enables use of SADL in F-16 aircraft. New display unit increases aircraft processing capability, increases pilot situational awareness and increases combat survivability and lethality.
	F-16D	26	26	216,000		
	Spares	41	41	142,000		
3	F-16 HEADS UP DISPLAY / ELECTRONICS UNIT (HUD/ AEU)	405	405	66,607	26,975,835	The upgrade will accommodate hardware to drive helmet mounted displays, provide better maintenance sustainability, and provide increased memory and processor power.
4	F-16 ADVANCED IDENTIFY FRIEND/FOE (AIFF)	405	405	225,185	91,200,000	AIFF provides the F-16 Block/25/30/32 fleet with an essential ability to identify friendly aircraft when employing beyond visual range weapons while avoiding friendly-fire disasters--critical for homeland defense and deployed operations.
5	C-130H2 APN-241 RADAR	101	101	539,605	54,500,000	The APN-59 radar currently installed on the C-130 suffers from low reliability, maintainability and sustainability. The APN-241 will provide increased capability and reduce maintenance costs.
6	TACTICAL DATA LINK				13,110,000	
	GROUP A, C-130, KC-135 & HH-60	462	462	5,000		Tactical Data Link is a low cost air-to-air and air-to-ground data link providing secure, jam resistant information transfer in a digitalized battlefield environment.
	GROUP B, C-130, KC-135 & HH-60	240	240	45,000		
7	C-130H2 NIGHT VISION IMAGING SYSTEM (NVIS) LIGHTING	104	104	130,000	13,520,000	In order to employ night vision devices, a fully compatible cockpit is required.
8	ALR-69 ANTENNA OPTIMIZATION, F-16 & A-10				12,739,834	
	A-10	102	102	35,587		Corrects deficiencies with the current installation to provide enhanced warning for air-to-air and-to-ground threats. Blocks 25/30/32 were funded in FY 2000.
	F-16 BLK 25/30/32/42	444	170	53,588		
9	A-10 RE-ENGINE	102	102	3,617,000	389,658,000	Currently underpowered, the A-10 engine replacement will provide increased thrust resulting in enhanced combat effectiveness and survivability.
10	F-16 BLK 42 RE-ENGINE	63	48	4,260,000	204,480,000	Replaces the PW -220 engine with the -229 to provide increased thrust. Carriage of external pods with the underpowered -220 reduced combat effectiveness.
					1,015,439,669	Total
	Data provided by: ANG/XOR					

### III. AIR FORCE RESERVE COMMAND OVERVIEW

#### a) Current Air Force Reserve Command (AFRC) Status

##### (1) General Overview

(a) Mission: AFRC supports the Air Force (AF) mission to defend the United States through control and exploitation of air and space by providing global reach and global power. The AFRC plays an integral role in the day-to-day AF mission and is not a force held in reserve during war or contingency operations.

(b) Resources: AFRC has 29 flying wings equipped with their own aircraft, six associate wings that share aircraft with active-duty units, and seven space operations squadrons. Three space operations squadrons share satellite control missions with active duty units; two squadrons share the space control mission; one squadron shares the missile warning mission; and one squadron provides the only AF presence in the weather satellite control mission. Additionally, there are more than 620 mission support units in AFRC, equipped and trained to provide a wide range of services, including medical and aeromedical evacuation, aerial support, civil engineering, security police, intelligence, communications, mobility support, logistics and transportation operations. AFRC has over 440 assigned aircraft comprised of the F-16, A/OA-10, C-5A, C-141, C/MC/WC/HC-130E/H/J/N/P, KC-135E/R, B-52H and HH-60G. These aircraft, crews and support personnel stand ready for assignment to the Air Combat Command (ACC), Air Education and Training Command, Air Mobility Command, and Air Force Special Operations Command upon mobilization.

##### (2) Status of Equipment

#### (a) Equipment On-hand

##### 1. Fighter Aircraft

a. F-16 - "Fighting Falcon": The F-16 is a highly maneuverable fighter designed to provide multi-role capability for today's complex battlefield environment. This aircraft is primarily used for missions in offensive-counter-air (air-to-air and air-to-ground), air-interdiction, suppression-of-enemy-air-defense, close-air-support, and air strike control. AFRC has 69 F-16C/D aircraft consisting of block 25, 30, and 32 airframes assigned to Naval Air Station (NAS), Joint Reserve Base, Ft Worth, TX, Hill Air Force Base (AFB), UT, Homestead ARS, FL, Luke AFB, AZ. These aircraft represent 5% of the overall Air Force F-16 inventory. Recent modifications include precision-guided munitions capability, Situational Awareness Data



**F-16 "Fighting Falcon"**

Link, electronic warfare receiver antenna relocation, and precision weapons compatible pylon upgrade. The next major modification identified by the Active component (AC) for the F-16 fleet is to modify the newest F-16s with a color display and processor. This will overcome the limitations in displaying real time mission information imposed by monochromatic displays in the cockpit. Because AFRC and the Air National Guard (ANG) are primarily equipped with older F-16s that use different processors than the AC, we will be teaming up to lay the groundwork necessary to provide similar information processors and color displays for AFRC and ANG assets. This capability will allow our pilots to continue to achieve interoperability with the AC in the information-intense airspace of the near future.



**A/OA-10 - Thunderbolt II"**

- b. A/OA-10 - "Thunderbolt II": The A-10 aircraft is primarily used in close-air-support (CAS) and forward air control (FAC) missions. The OA-10 is the FAC version of the A-10. There are 52 O/A-10 aircraft assigned to AFRC, located at Whiteman AFB, MO, Barksdale AFB, LA, and New Orleans NAS Joint Reserve Base, LA. When resources become available, ACC will upgrade all A-10 aircraft with the precision engagement program. This modification incorporates tactical data link, targeting pods, and smart weapons capability.

2. B-52H Bomber Aircraft – "Stratofortress": The B-52H mission is to perform strategic attack, air-interdiction, offensive-counter-air, air-to-surface, suppression of enemy air defenses, mine-laying, and joint maritime operations. Nine B-52H aircraft are assigned to AFRC at Barksdale AFB, LA. This unit is tasked to employ unguided gravity conventional munitions, Conventional Air Launched Cruise Missiles, the precision Global Positioning Systems (GPS) - guided Joint Direct Attack Munition (JDAM), and the Wind Corrected Munitions Dispenser (WCMD). Enhancements to the AFRC B-52 fleet currently under consideration are:



**B-52H - "Stratofortress"**

(1) Visual clearance of the target area in support of other conventional munitions employment; (2) Self-designation of targets, eliminating the current need for support aircraft to accomplish this role; (3) Target coordinate updates to JDAM and WCMD, improving accuracy; and (4) Bomb Damage Assessment of targets.

### 3. Airlift Aircraft

- a. C-141C - “Starlifter”, Strategic Airlift: The C-141C is used for long-range airlift. AFRC has 45 C-141C aircraft assigned to Wright- Patterson AFB, OH, Andrews AFB, MD, and March Air Reserve Base (ARB), CA. The AF’s current plan is to retire the fleet by FY 2006.



**C-141C - “Starlifter”**

- b. C-5 “Galaxy”, Strategic Airlift: The C-5A is a long range, heavy-lift aircraft. AFRC has 32 aircraft assigned to Westover ARB, MA, and Lackland AFB, TX. The steady decrease in reliability and increase in annual maintenance costs of the C-5A are significant concerns. Two major modification programs, the C-5 Avionics Modernization Program (AMP) and the Reliability Enhancement and Re-engining Program (RERP) are underway for the C-5 fleet. The RERP depends upon successful completion of AMP. The RERP will greatly enhance engine reliability, decrease noise and emissions and increase the fleet's climb and payload capability.



**C-5 “Galaxy”**

- c. C-130 “Hercules”, Theater Airlift: The C-130 aircraft is used to support the tactical airlift mission. Its speed, range, load-carrying characteristics, and capability to operate under difficult terrain conditions make it an invaluable and versatile aircraft able to land and deliver its cargo on unimproved landing strips. Other missions involve aeromedical evacuation and special air support operations. Additionally, two civil missions are supported by reserve C-130H aircraft: fire fighting and aerial spraying. AFRC has 107 C-130 aircraft, including the E, H, and J models assigned to 11 different Reserve units. Long-term modernization



**C-130 “Hercules”**

includes AMP to the E and H models. This effort will convert the entire C-130E and H fleet to a standard configuration called the C-130X. Major X-model changes would include a glass cockpit (avionics modernization), more powerful engines (Dash 15), and an Auxiliary Power Unit.



#### 4. Special Mission Aircraft



**WC-130 "Hurricane**

**"H" models with "J" models once the WC-130J is weather certified.**

a. WC-130 "Hurricane Hunter": There are 10 WC-130H and 6 WC-130J (Hurricane Hunter) aircraft operating with the 53<sup>rd</sup> Weather Squadron at Keesler AFB, MS. These aircraft are specially modified to penetrate hurricanes and typhoons while collecting and transmitting data to special ground stations. The aircraft carries meteorologists and other weather specialists who track and forecast the movement of these severe storms. The 53<sup>rd</sup> Weather Squadron is scheduled to replace all of the

b. MC-130E "Combat Talon I": AFRC owns 14 MC-130E Combat Talon I aircraft assigned to the 919<sup>th</sup> Special Operations Wing at Duke Field, FL. This is AFRC's only "reverse-associate" unit, where active duty aircrews fly Talon I missions on the AFRC aircraft. The MC-130E is equipped for night and adverse weather, low-level, and deep-penetration tactical missions. Additionally, these aircraft conduct aerial refueling of special operations helicopters.



**MC-130E "Combat Talon I"**

c. HC-130 Hercules - Combat Rescue Air-to-Air Refueling: AFRC has 10 HC-130N/P aircraft located at Patrick AFB, FL, and Portland International Airport, OR. The HC-130N/P is configured to support the Combat Search and Rescue (CSAR) mission. During FY 2003 and FY 2004, the unit at Portland will be transferring assets back to the active Air Force resulting in a single AFRC unit of five HC-130N/Ps at Patrick AFB, FL, after the first quarter of FY 2004.



**HH-60G - Combat Rescue**

d. HH-60G - Combat Rescue Helicopter: AFRC has 23 HH-60G helicopters located at Davis Monthan AFB, AZ, Patrick AFB, FL, and Portland IAP, OR, to support CSAR taskings of ACC. During FY 2003 and FY 2004, the Portland unit will transfer its assets back to the active Air Force. After the first quarter of FY 2004, AFRC will be assigned a total of 15 HH-60G at Davis Monthan AFB, AZ, and Patrick AFB, FL.

### 5. KC-135 Aerial

Refueling Aircraft, “Stratotanker”: While the KC-135 is primarily tasked with aerial refueling, it is also used to airlift cargo and personnel. AFRC has 68 KC-135E/R aircraft assigned to Selfridge Air National Guard Base, MI, Beale AFB, CA, Grissom ARB, IN, Seymour-Johnson AFB, NC, March ARB, CA, and Tinker AFB, OK. AFRC is scheduled to replace 16 KC-135E models with 16 KC-135-R models that will be transferred from the AC in FY 2004 and FY 2005. Reserve squadrons equipped with KC-135 aircraft provide about 13% of the AF’s KC-135 aerial refueling capability.



**KC-135 “Stratotanker”**

### 6. Trainers

#### a. C-130 H2 & H3 Weapon Systems Trainers (WST):



**C-130 H2 & H3 Weapon Systems Trainers (WST)**

WSTs simulate all cockpit instruments, including ground-mapping radar and air defensive systems and are capable of Night Vision Goggle (NVG) training. The WSTs support tactical, low-level, airdrop training for C-130 pilots, copilots, flight engineers, and navigators. Each WST is also accompanied by a stand-alone navigation trainer to provide C-130 navigators with quality training in over-water flight procedures and airborne radar approaches. AFRC expects Full Operational Capability (FOC) for the Formal Training Unit (FTU) in FY 2003. The first FTU class started in August 2001. With one H2 WST to accommodate

the existing continuation training and additional FTU student loads, FOC for training these students cannot be achieved without additional devices in the H2 configuration. Additionally, a fuselage trainer currently available at Dobbins ARB, GA, supports training for the Loadmaster position. This trainer will require a long-term beddown conducive to FTU training.

#### b. C-130 J Maintenance and Aircrew Training System

(MATS): The C-130 J MATS program is supported by an AFRC initiative to build the first WST. This C-130 J WST is equipped with a state-of-the-art hydraulic motion base and a large, wrap-around out-the-window visual system. The WSTs simulate all cockpit instruments, including ground-mapping radar, air defensive systems, and are capable of NVG training. The WSTs support tactical, low-level, airdrop training for C-130 pilots, copilots, and loadmasters. The WST is located at Keesler AFB, MS. This AFRC WST serves AC crews of the C-130J and RC crews of the C-130J and WC-130J.

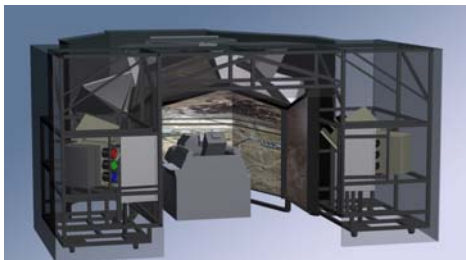
c. C-5 Weapon Systems Trainer: AFRC has a C-5B simulator at Westover ARB, MA. This simulator has a unique visual capability to train both air refueling and conventional air-land mission procedures. Another AFRC C-5 WST is located at the 433<sup>rd</sup> Airlift Wing at Lackland AFB, TX. This WST has state-of-the-art hydraulic-motion base and a large, wrap-around out-the-window visual system which complies with FAA level C+ standards. It supports training of the pilot, copilot, and flight engineer positions for mission qualification, upgrade, and continuation training. Maintenance Engine Run training capability provided by this WST also supports maintenance personnel training.



C-5 Weapon Systems Trainer (WST)

d. C-141 Total Training System: With the programmed draw down of the C-141 fleet, all the remaining assets will have been moved to the RC by FY 2002. As a result, AFRC established an FTU in October 2001, at Wright-Patterson AFB, OH. The FTU provides initial qualification training for all C-141 crewmembers. Follow-on training for the C-141C model is conducted at Wright Patterson AFB, OH, and final B-model training is conducted at McGuire AFB, NJ. Due to the age of this airframe parts and subsystems are becoming obsolete and cannot be effectively maintained. Given the current operations tempo, it is essential that these training assets be maintained to support training mission ready crews.

e. A-10 Full Mission Trainer (FMT): AFRC has two A-10 FMTs at Whiteman AFB, MO, and New Orleans NAS, LA, and two older A-10 FMTs at Barksdale AFB, LA. The A-10 FMT provides the highest fidelity simulator training for the A-10 flight community. These trainers are critical to supporting mission training capabilities, and normal, emergency, instrument, weapons, or tactics procedures. Planned upgrades include PC-based image generator, with a wrap-around visual display system and upgrades to the visual database using real world photographic imagery. To continue to train crews effectively, concurrency modification to the training devices must be funded to ensure configurations between the aircraft and the training devices are identical. Although AFRC's A-10 FMTs do not currently operate in a networked/ Distributed Mission Training (DMT)-like training environment, the design supports networked/DMT-like training capability.



F-16 Multi-Task Trainer (MTT)

f. F-16 Multi-Task Trainer (MTT): AFRC has four F-16 MTTs located at Hill AFB, UT, Homestead AFB, FL, NAS JRB Ft. Worth, TX, and Luke AFB, AZ. These MTTs provide important systems training to F-16 Block 25/30/32-qualified AFRC, ANG, and ACC pilots. Furthermore, these trainers are critical in F-16 supporting mission training capabilities, and normal, emergency, instrument, weapons, and tactics procedures. AFRC also plans to upgrade



these devices to full tactical mission capability over the next several years. To continue to train crews effectively in the procedures listed above, concurrency modification to the training devices must be funded to ensure configurations between the aircraft and the training devices are maintained. While the F-16 MTTs do not currently operate in a networked/DMT-like training environment, the design supports networked/DMT-like training capability. MTTs do not currently have the required fidelity to operate with other higher fidelity network capable devices. At a minimum, visual systems upgrades will be required to upgrade these devices to DMT minimum fidelity standards.

(b) Average Age of Current Equipment: See *Table 2*.

(c) Compatibility of Current Equipment with AC: AFRC equipment is compatible to support all applicable AF missions. The only equipment that might be considered a substitution is the 10 WC-130H aircraft at Keesler AFB, MS. The unit was programmed to have all 10 WC-130J models delivered by the end of FY 2001; however, MIL SPEC delivery from the manufacturer has been delayed. The WC-130J aircraft are fully assembled but are awaiting equipment modifications to meet acceptance specifications. The unit will continue to operate the older WC-130H until delivery of the remaining 6 WC-130J aircraft. Delivery is contingent upon successful weather mission certification.

With the help of specific congressional funding, AFRC has been able to keep the AFR equipment mission compatible. Some of the completed upgrades include:

- Targeting Pods for the F-16 Block 30 aircraft.
- Tactical Data Link and Electronic Warfare Management Systems for F-16s and Enhanced Avionics for A-10s.
- HH-60 Self-Protection System.

The next essential modification efforts for AFRC will be:

- Advanced information processors and color display for improved tactical information display to pilots of F-16 and A-10, and enhanced precision attack capabilities to F-16 Targeting Pods.
- Keeping the A-10 and B-52 compatible with current medium altitude and night employment requirements with precision engagement upgrades for A-10 and B-52 and an engine upgrade for A-10.
- Command and control data link for B-52, HH-60, all C-130 derivatives and KC-135.

(d) Maintenance Issues: The AF logistics and maintenance programs are fully established to provide seamless support to all equipment and weapon systems in the AF inventory. There is no separate maintenance program for the ARC nor is there a separate logistics effort controlled by the AFRC. The redistribution of active duty aircraft and equipment to the ARC necessitated a strong working relationship between AF lead commands and other supporting commands to ensure assets are properly

maintained and operational. This trend will be maintained through FY 2004 and into the foreseeable future.

(e) Modernization Programs and Shortfalls: Congress initiated National Guard and Reserve Equipment Appropriation (NGREA) funding in December, 1981, to address RC readiness issues. Public laws and legislative language directed that this equipment appropriation be intended to overcome shortfalls in the readiness, combat capability, and modernization issues of Reserve forces. The following are shortfalls categorized by major weapon systems.

#### 1. Fighter Aircraft

a. F-16: One of the main limitations of AFRC F-16 aircraft is the need for new display processors to fully maximize the pilots' situational awareness. The current display processor can fail without any prior indication of operating in a degraded mode. AFRC is actively looking at upgrading the processor with Commercial-Off-the-Shelf (COTS) technology. AFRC F-16s are also being modified to improve the threat warning accuracy with a modification to the antenna location for the ALR-69 radar-warning receiver system.

b. A-10 and OA-10: One of the A-10 requirements is to continue to upgrade the A-10 and OA-10 in the area of high threat survivability. Completed efforts have separately provided an accurate missile warning system and effective modern flares. A modification that will fully satisfy the survivability requirement, dictated by current tactics and enemy threat, would be the incorporation of a preemptive covert flare system. The A-10 can leverage the work done on the F-16 Radar Warning Receiver and C-130 towed decoy development programs to achieve a cost-effective capability.

An additional shortfall is the A/OA-10's thrust deficiency. This aircraft originally designed for low altitude employment is now tasked, according to theater commanders' requirements, to operate at medium altitudes. With the current engines, this requires operations with reduced weapons payload and reduced fuel load. There are 45 AFRC A/OA-10s that need upgraded structures and engines. At 2 engines per aircraft and 5 spares, there is a requirement for a total of 95 engines.

2. Bomber Aircraft - B-52H: A major modification requirement is to provide a data-link or situational awareness system to support the extended B-52 mission timeline. The battlefield can be expected to change significantly during a lengthy (8-10 hours or more) B-52 mission. A system is needed to provide the crew with a moving map display that includes enemy surface and air threats in addition to friendly aircraft locations. The display system would also be used to provide the aircrew with target-set updates during flight. Another necessary modification is the Laser Guided Bomb pod for Battle Damage Assessment. It could instantly provide war planners with campaign mission results.

### 3. Airlift / Special Missions Aircraft

a. C-141: The C-141 is scheduled to retire in FY 2006. Follow on replacement missions include the C-5, C-17, and KC-135.

b. HH-60G and HC-130 - Combat Search and Rescue (CSAR): CSAR is a requirement for most military contingency operations. For example, the 939<sup>th</sup> Rescue Wing's (RQW) Pave Hawk helicopters and HC-130 Hercules aircraft are in constant demand. The wing's crews are trained for day or night operations and low-level and over water missions. They require night vision devices to enhance their rescue operations. In addition to its combat mission, the 939<sup>th</sup> RQW routinely supports civilian search and rescue requirements at Keflavik, Iceland, and in the coastal waters of the U.S. beyond the range of the United States Coast Guard. It also provides support to: Aerospace Expeditionary Force (AEF) requirements; NASA Space Shuttle mission rescue support; launch support at Cape Canaveral, FL; and drug enforcement agencies in counter-drug operations.

ACC has lead command responsibility for modernization of the CSAR Total Force capabilities. They have not been able to fully meet their obligations due to higher priorities and fiscal constraints. Although an initiative has begun to seek a replacement for HH-60 helicopter, no plans exist to fund a replacement for the aging HC-130 Tanker aircraft. Most of these airframes are approaching 40 years of service. AFRC was able to use NGREA funds to modernize some of the combat rescue assets and maintain the capability to support the AF in numerous contingency operations as well as AEF rotations. Future support of CSAR missions will be difficult without adequate funding.

c. C-130: Necessary upgrades include the continued modernization of HC-130s with Night Vision Compatible Aircraft Lighting Systems and equipping nine HC-130s with the APN-241 navigation ground map radar to improve aircrew survivability and weapon system reliability.

4. Aerial Refueling Operations - KC-135: The KC-135E fleet is experiencing significant reliability and sustainability problems and is in need of a configuration upgrade. For example, the current engine system (engines/start carts, etc.) does not meet noise and environmental requirements of the Clean Air Act. In response to these requirements, the AF fielded an engine retrofit kit in FY 1996 at a cost of \$26M per aircraft. There are 16 AFRC KC-135E aircraft requiring upgrades to, or replacement by, the KC-135R configuration. The AFRC considers KC-135E to R modernization as one of its top priorities.

(f) Overall Equipment Readiness: Presently, AFRC weapons systems maintain equipment readiness on par with the Active Air Force except where limited by modernization restrictions. Readiness is achieved with constant close coordination with the lead commands to assure inclusion of the AFR assets and missions in current requirements.

1. Ongoing FY 2002 Projects: In FY 2002, Congress approved an amount of \$75.2M for the AFR in the NGREA. The following programs are being funded:

a. C-130J Aircraft: One C-130J was procured to continue the conversion of the 815 Airlift Squadron at Keesler AFB, MS. The Air Force approved Multi-Year Buy calls for completion of the Keesler conversion by FY 2005.

b. F-16 SEM/EDX Engine Tester: SEM/EDX machine reduces the risk of catastrophic engine failure by allowing maintenance personnel to perform a more thorough inspection of the #4 bearing in the F-16 engine. Two systems will be procured to enhance mission readiness as an interim fix until ACC procured systems are delivered.

c. GPS Capable Survival Radios: ACC has fulfilled the majority of this requirement for a training package of PRC-112B/C survival radios for 10<sup>th</sup> Air Force fighter, rescue and special operations units. The PRC-112B (sometimes referred to as the Hook 112) has become the standard survival radio in Operations NORTHERN WATCH (ONW) and SOUTHERN WATCH (OSW). This radio features an internal GPS receiver and the ability to communicate with a survivor by secure data burst transmission. The remainder of this requirement, ground-loading terminals, will be procured using NGREA funds.

d. F-16 PIDS Universal Upgrade: Modification to the existing PIDS that adds 1760 Bus compatibility, plus wiring and receptacles necessary for an IR Missile Warning System.

e. A-10 Avionics to EW Bus Connection: This modification installs a connection between the aircraft electronic warfare bus and the aircraft avionics bus. It improves the performance of the ALQ-213 Countermeasures Management System.

f. A-10 FMT/MTT CASNET: CASNET will be the initial entry of the CAS/CSAR community into the larger DMT arena. COTS (non-developmental) hardware components are required to be added to AFRC A-10 flight simulators to provide a secure gateway for CASNET participation.

2. FY 2000 and FY 2001 NGREA Delivery: During FY 2002, AFRC took delivery of the following modifications and miscellaneous equipment purchased with FY 2000 and FY 2001 NGREA funds:

- HC-130 NCALS
- ALQ-131 Pod Interface
- C-130H2/H3 ATS - ECPs
- HC-130 Radar Replacement
- C130 Armor

- A-10 LARS
- A-10 Embedded GPS/INS
- F16 ALR-69 Antenna Cable Mod
- Land Mobile Radios (LMR)
- F-16D SADL Installation
- HH-60 LARS

b) Changes Since Last NGRER: A significant change in the AFRC mission areas has been the reduction of AFRC CSAR assets as a result of the programmed transfer of 5 HC-130s and 8 HH-60Gs to the Active Air Force to be completed during FY 2004. This is seen in *Table 1* and *Table 5*. At the time of publication of this report, there were several changes in near term acquisitions plans for the AF that will include changes for AFRC equipment types and quantities. These include an increase in the number of C-17s that could result in the formation of a C-17 equipped unit for AFRC. There is also the possibility of a COTS tanker aircraft, which might result in a trickle down of KC-135R aircraft. These changes have not yet been approved and, therefore, have not been included.

c) Future Years Program (FY 2004-FY 2006)

(1) FY 2006 Equipment Requirements: The following are unfunded, priority, major equipment requirements that were validated by the AFRC Requirements Review Board. AFRC continues to pursue AF and OSD support to provide funding necessary to meet these equipment needs.

(a) C-130J Aircraft: Three additional aircraft are required to complete Keesler AFB, MS, conversion to J model C-130s.

(b) KC-135 Re-Engine: This requirement is to replace all E model engines with R model engines. The R model upgrade increases payload capability of aircraft and includes larger flight control surfaces and improved landing gear and brakes. The total program needs include kits and installation for a total of 16 aircraft.

(c) F-16 Commercial Central Interface Unit (CCIU): The CCIU provides weapons interface, communication and data processing for the Block 25/30/32 F-16. Capabilities of the existing ACIU limit integration of current generation 'Smart Weapons' and prevent using full employment potential of the aircraft. Future capabilities planned for integration on the F-16 will be limited or impossible under constraints imposed by the existing CIU. The CCIU has been competitively selected for development as a form and fit replacement for the CIU. Although production has been funded by direction of the Global Attack Board, some NRE remains unfunded, and test funding needs to be moved up to FY 2003.

(d) F-16 Color Display Processor: Current AFR F-16 display processors attempt to process much more data than they were originally designed to process. Processors "lock-up" frequently and replacements are no longer produced.

High-definition, color, multi-functional display processors will provide the F-16 pilot more precise and detailed data, with greatly increased data handling capability. This will allow improvement in threat awareness, positive identification of friendly locations, target interpretation, advanced situational awareness, and increased weapons and targeting system accuracy and provisions to accommodate increased data handling required by near term data and weapons improvements.

(e) C/HC-130 Armor: These are lightweight Kevlar reinforced armor blankets and panels mounted on the side and bottom of the C/HC-130 flight deck, that provide added crew protection. C-130 aircraft provide theater tactical airlift while HC-130 aircraft conduct CSAR refueling operations at low altitudes. These operations often occur in a small arms and AAA threat environment.

(f) PRC-112, GPS Capable Survival Radio: The requirement is for a training package of 30 PRC-112B/C survival radios for 10<sup>th</sup> Air Force fighter, rescue and special operations units. The PRC-112B is the standard survival radio required by EUCOM in ONW and CENTCOM in OSW. To fully exploit the GPS and secure communications capabilities of these radios, CSAR crews require extensive initial and recurring training both on the ground and in airborne operations. To complicate the training problem no PRC-112 radios have been acquired for CONUS units. With the radios in short supply, AFRC units borrow training assets and conduct “just-in-time” training prior to deployment. Air Force Reserve units with a recurring commitment to ONW and OSW need full-time access to the PRC-112B. Production of this radio was curtailed due to Air Force pursuit of CSEL technology and sale of the company to a new vendor.

(g) Tactical Radios: New tactical radios will replace the older, unsupportable, outdated Scope Shield I model which are incompatible with currently deployed active component radios. The new tactical radios have a proven capability of providing adequate and necessary secure communication links during training exercises and contingency operations. The purchase of these tactical radios will span several years with an acquisition plan designed to acquire radios at a rate similar to the non-reparable failure of currently fielded SS I radios.

(h) F-16 Helmet Mounted Cueing System (HMCS): HMCS will provide F-16 pilots an integrated capability by combining data from the multi-functional displays, instrumentation, and other on-board avionics. It will significantly improve Air-to-Air and Air-to-Ground mission effectiveness by providing Heads-Up Display information and spatial cueing directly onto an aircrew helmet visor.

(i) F-16 Pylon Integrated Dispenser System (PIDS): PIDS universal upgrade is a modification to the PIDS that allows the aircraft to comply with Military Standard (MIL STD )1760 for electronics bus. The MIL STD 1760 interface is necessary to support the growing inventory of precision guided weapons that use the GPS for all weather trajectory guidance.

(j) C-130 Unit Training Device H3 and H2 Model Conversion: The 700 Airlift Squadron at Dobbins ARB began C-130 H2 Formal Training with a minimum load of students in FY 2001. The number of students will steadily increase to their maximum level in FY 2003. Current ATS assets available at Dobbins for the FTU consist of one C-130H2 WST. A single device cannot support sustained operations for all of the student and continuation training requirements expected by FY 2003. An excess C-130 ULT (but with H3 configuration) was relocated from Niagara Falls to Dobbins. Conversion to an H2 trainer will allow the Dobbins FTU to run at their full capability of student production.

(k) HH-60/C-130/KC-135 Carry-on Data Link: This program provides tactical data link capability as a carry-on personal computer-based system for AFRC HH-60/C-130/KC-135 aircraft. It also provides air-to-ground interface for airdrop, aerial refueling, and combat rescue coordination enroute, as well as air-to-air tactical picture and escort situation to aircrews.

(2) Anticipated New Equipment Procurements: AFRC received approximately \$75M in the NAREA in FY 2002. This included a C-130J aircraft and a small amount of discretionary funding that will allow AFRC to procure a limited amount of equipment. The following equipment procurement efforts were selected as the most critical to pursue within the total authorized amount:

- C-130J Aircraft
- F-16 SEM/EDX Engine Tester
- Survival Radios with GPS
- F-16 PIDS Universal Upgrade
- A-10 Avionics Bus to EW Connection
- A-10 FMT/MTT CASNET.

(3) Anticipated Transfers and Withdrawals from AC to RC: Over the FYDP, AFRC anticipates the replacement of C-141C aircraft with either C-5, C-17 and KC-135R aircraft. Additionally, AFRC's aging KC-135E aircraft will be replaced by KC-135R models.

(4) Remaining Equipment Shortages and Modernization Shortfalls at the End of FY 2006, and the Effects On Overall Equipment Readiness: AFRC can mobilize forces to support nearly every contingency worldwide, including domestic humanitarian relief missions. There has been no impact on readiness attributable to this mobilization. All of the selective reserve units are fully capable of meeting their required response time. This impressive capability has been proven and represents the RC model of seamless integration into gaining Major Commands' operational employment. AFRC forces are fully integrated into the Global Reach laydown. With the establishment of the 10 AEFs, all AFRC combat support forces will be continually integrated with AC forces in meeting the overall operational employment requirements in contingencies in all theaters of operations.

AFRC combat readiness and mobilization are regularly evaluated in accordance with the AF Inspection system. Operational Readiness Inspections (ORI) are accomplished by gaining major commands every four years. The inspection systems measure a unit's ability to mobilize and deploy, as well as its combat readiness. Medical units (previously evaluated repeatedly by the AF Inspection Agency) are now included in ORIs to ensure they are ready to meet their wartime taskings. Reserve units are measured against the same standards and criteria required of an AC unit.

d) Summary/Conclusion: AFRC continues to advocate its modernization needs to the AC and Congress. Through the hard work and dedication of AFRC men and women, reserve personnel participate in real-time contingencies as a critical partner on the AF team. To ensure a sharp and ready edge, AFRC plans, programs, and facilitates its equipment requirements within the AF process. AFRC requirements are presented, analyzed, and advocated under the same process used by the AF. In addition, AFRC utilizes its internal Requirements Review process to further prioritize, validate, and source below the line and unfunded requirements. It engages in vigorous modernization efforts to provide the capability required to meet the war fighters' needs.

Since September 11, 2001, AFRC has faced many new challenges. Foremost among these is the challenge of maintaining a steady state operations tempo. While this is possible in the short term, long term effects will include reduced manning and retention levels and a decrease in mission capable rates for AFRC aircraft. AFRC continues to work hand-in-hand with the AC to surmount these challenges and remain a viable part of the Total Force.

AFRC steadfastly upholds the core values of "Integrity First, Service Before Self, and Excellence In All We Do" as its operating standard.



## Consolidated Major Item Inventory and Requirements

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendations as to the quantity and type of equipment which should be in the inventory of each Reserve component.*

*Note:*

*Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>Equipment Number</b>	<b>Beginning FY 2004 COST</b>	<b>Beginning FY 2004 QTY O/H</b>	<b>Beginning FY 2005 QTY O/H</b>	<b>Beginning FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY REQ</b>
<b>AIR REFUELING</b>							
AIR REFUELING, KC-135E	KC-135E	44,000,000	16	8	0	0	0
AIR REFUELING, KC-135R	KC-135R	57,690,000	54	64	72	72	72
AIR SPT, OA-10A	OA-010A	10,900,000	8	8	8	8	8
<b>AIR SUPPORT</b>							
SPECIAL OPS MC-130E	MC-130E	72,300,000	14	14	14	14	14
WEATHER SVC WC-130H	WC-130H	16,800,000	0	0	0	0	0
WEATHER SVC WC-130J	WC-130J	75,500,000	10	10	10	10	10
<b>AIRLIFT</b>							
AIRLIFT, C-130E	C-130E	13,240,000	23	23	18	11	11
AIRLIFT, C-130H	C-130H	33,500,000	79	78	78	78	78
AIRLIFT, C-130J	C-130J	53,900,000	4	5	8	8	8
AIRLIFT, C-141C	C-141C	47,180,000	40	16	8	0	0
AIRLIFT, C-17A	C-017A	184,000,000	0	0	2	8	8
AIRLIFT, C-5A	C-005A	169,960,000	32	32	32	40	40
<b>BOMBER</b>							
BOMBER, B-52H	B-052H	73,400,000	9	9	9	9	9
<b>FIGHTER</b>							
FIGHTER, A-10A	A-010A	10,900,000	44	44	44	44	44
FIGHTER, -16C	F-016C	20,910,000	62	62	62	62	62
FIGHTER, F-16D	F-016D	20,910,000	10	10	9	9	9
<b>RESCUE</b>							
RESCUE, HC-130N	HC-130N	20,500,000	5	5	5	5	5
RESCUE, HC-130P	HC-130P	20,500,000	1	1	1	1	1
RESCUE, HH-60G	HH-060G	17,600,000	14	14	14	14	14
<b>TRAINERS</b>							
TRAINER, A-10 FMT	A-10 FMT	2,800,000	4	4	4	4	4
TRAINER, C-130 H2, ATD	C-130H2 ATD	5,000,000	1	1	1	1	1
TRAINER, C-130 H2, WST/SNS	C-130H2 WST/SNS	20,000,000	1	1	1	1	1
TRAINER, C-130 H3, ULT	C-130H3 ULT	6,000,000	0	0	0	0	0
TRAINER, C-130 H3, WST/SNS	C-130H3 WST/SNS	11,500,000	1	1	1	1	1
TRAINER, C-130 J, WST	C-130J WST	31,000,000	2	2	2	2	2
TRAINER, C-5, WST	C-5B WST	27,000,000	2	2	2	3	3
TRAINER, F-16 MTT	F-16 MTT	2,500,000	4	4	4	4	4

**AFRC**  
**Average Age of Equipment**

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for fiscal year (FY) 2004.*

<b>NOMENCLATURE</b>	<b>EQUIP No.</b>	<b>AVERAGE AGE</b>	<b>REMARKS</b>
<b>AIRLIFT AIRCRAFT</b>			
AIRLIFT C-130E	C-130E	39	
AIRLIFT C-130H	C-130H	13	
AIRLIFT C-130J	C-130J	3	
AIRLIFT C-141C	C-141C	37	
AIRLIFT C-5A	C-005A	32	
<b>BOMBERS</b>			
BOMBER B-52H	B-052H	40	
<b>FIGHTERS</b>			
FIGHTER A-10A	A-010A	23	
FIGHTER F-16C	F-016C	17	
FIGHTER F-16D	F-016D	16	
<b>RESCUE AIRCRAFT</b>			
RESCUE HC-130N	HC-130N	34	
RESCUE HC-130P	HC-130P	38	
RESCUE HH-60G	HH-060G	11	
<b>REFUELLING AIRCRAFT</b>			
AIR REFUELING KC-135E	KC-135E	44	
AIR REFUELING KC-135R	KC-135R	42	
<b>SUPPORT AIRCRAFT</b>			
AIR SUPPORT OA-10A	OA-010A	23	
SPECIAL OPS MC-130E	MC-130E	38	
WEATHER SVC WC-130H	WC-130H	37	
WEATHER SVC WC-130J	WC-130J	2	
<b>TRAINERS</b>			
TRAINER, A-10 FMT	A-10 FMT	4	
TRAINER, C-130 H2, ATD	C-130H2 ATD	3	
TRAINER, C-130 H2, WSTSNS	C-130H2 WST/SNS	3	
TRAINER, C-130 H3, ULT	C-130H3 ULT	6	
TRAINER, C-130 H3, WST/SNS	C-130H3 WST/SNS	4	
TRAINER, C-130J, WST	C-130J, WST	2	
TRAINER, F-16 MTT	F-16 MTT	11	

**Service Planned Procurements (P-1R Data)**

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>STRATEGIC AIRCRAFT</b>				
B-52	3,000,000	7,900,000	9,000,000	
<b>TACTICAL AIRCRAFT</b>				
A-10	1,900,000	6,400,000	5,900,000	
F-16	4,900,000	3,600,000	3,900,000	
<b>AIRLIFT AIRCRAFT</b>				
C-5	27,300,000	27,100,000	111,462,000	
<b>OTHER AIRCRAFT</b>				
C-130	24,700,000	20,800,000	49,300,000	
C130J MODS	2,500,000	9,600,000	0	
C-135	54,100,000	0	17,100,000	
H-60	10,600,000	16,900,000	5,100,000	
<b>COMMON SUPPORT EQUIPMENT</b>				
COMMON SUPPORT EQUIPMENT	23,021,000	25,075,000	28,084,000	
<b>CARGO + UTILITY VEHICLES</b>				
TRUCK, CARGO-UTILITY, 3/4T, 4	30,000	30,000	31,000	
TRUCK, CARGO-UTILITY, 3/4T, 4	0	27,000	28,000	
TRUCK MAINT/UTILITY/DELIVERY	68,000	69,000	70,000	
HIGH MOBILITY VEHICLE (MYP)	63,000	49,000	67,000	
ITEMS LESS THAN \$5,000,000	880,000	1,237,000	1,282,000	
<b>SPECIAL PURPOSE VEHICLES</b>				
HMMWV, ARMORED	75,000	76,000	78,000	
HMWWV, UP-ARMORED	0	180,000	184,000	
TRACTOR, TOW, FLIGHTLINE	37,000	38,000	39,000	
TRUCK HYDRANT FUEL	0	142,000	145,000	
ITEMS LESS THAN \$5,000,000	1,464,000	2,160,000	2,373,000	
<b>FIRE FIGHTING EQUIPMENT</b>				
ITEMS LESS THAN \$5,000,000	429,000	876,000	447,000	
<b>MATERIALS HANDLING EQUIPMENT</b>				
TRUCK, F/L 10,000 LB	190,000	194,000	198,000	
ITEMS LESS THAN \$5,000,000	391,000	540,000	551,000	
<b>BASE MAINTENANCE SUPPORT</b>				
TRUCK, DUMP	102,000	104,000	107,000	
RUNWAY SNOW REMOVAL & CLEANING	384,000	718,000	732,000	
ITEMS LESS THAN \$5,000,000	1,587,000	2,181,000	2,689,000	
<b>ELECTRONICS PROGRAMS</b>				
NATIONAL AIRSPACE SYSTEM	4,942,000	0	0	
WEATHER OBSERVE/FORECAST	300,000	600,000	0	
SPECIAL COMM-ELECTRONICS PROJECTS				
AF GLOBAL COMMAND & CONTROL SYSTEM	520,000	525,000	525,000	
COMBAT TRAINING RANGES	700,000	700,000	700,000	
GCSS-AF FOS	100,000	100,000	0	
THEATER BATTLE MGT C2 SYSTEM	500,000	500,000	12,340,000	
<b>AIR FORCE COMMUNICATIONS</b>				
BASE INFORMATION INFRASTRUCTURE	1,653,000	2,323,000	0	
DEFENSE MESSAGE SYSTEM (DMS)	315,000	315,000	315,000	

**Service Planned Procurements (P-1R Data)**

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07. Ammunition is not included.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>DISA PROGRAMS</b>				
NAVSTAR GPS SPACE	0	1,220,000	1,680,000	
<b>ORGANIZATION AND BASE</b>				
CCTV/AUDIOVISUAL EQUIPMENT	500,000	500,000	500,000	
ITEMS LESS THAN \$5,000,000	164,000	164,000	164,000	
<b>TEST EQUIPMENT</b>				
ITEMS LESS THAN \$5,000,000	116,000	119,000	121,000	
<b>PERSONAL SAFETY AND RESCUE EQUIP</b>				
NIGHT VISION GOGGLES	74,000	76,000	77,000	
ITEMS LESS THAN \$5,000,000	471,000	481,000	490,000	
<b>DEPOT PLANT + MATERIALS HANDLING EQ</b>				
MECHANIZED MATERIAL HANDLING	0	0	100,000	
ITEMS LESS THAN \$5,000,000	361,000	368,000	371,000	
<b>ELECTRICAL EQUIPMENT</b>				
FLOODLIGHTS	62,000	0	0	
ITEMS LESS THAN \$5,000,000	287,000	292,000	298,000	
BASE SUPPORT EQUIPMENT				
PHOTOGRAPHIC EQUIPMENT	150,000	150,000	150,000	
AIR CONDITIONERS	10,000	10,000	10,000	
ITEMS LESS THAN \$5,000,000	828,000	845,000	862,000	
<b>TOTAL:</b>	<b>169,774,000</b>	<b>135,284,000</b>	<b>257,570,000</b>	

## National Guard and Reserve Equipment Appropriation (NGREA) Procurements

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>REMARKS</b>
F-16 ALR-69 ANTENNA CABLE MOD (INSTALLATION)	740,000			
HH-60G FLIGHT ENGINEER/GUNNER SEAT	1,400,000			
A-10 UNIT TRAINING DEVICE-ECPS	1,314,000			
F-16 COLOR DISPLAY PROCESSOR (NRE)	1,000,000			
TACTICAL RADIOS	500,000			
C-130J		70,770,000		
F-16 SEM/EDX ENGINE TESTER		600,000		Reflects -\$300,000 reduction for inflation adjustment
SURVIVAL RADIO TRAINING PACKAGE (PRC-12)		84,000		Reflects -\$246,000 reduction for inflation adjustment
F-16 PYLON DISPENSER UNIVERSAL UPGRADES		2,970,000		
A-10 AVIONICS BUS TO EW BUS CONNECTION		600,000		
A-10 FMT/MTT CASNET		200,000		
WC-130 DIGITAL DEWPOINT HYGROMETER			650,000	
HC-130 LIGHTWEIGHT AIRBORNE RETRIEVAL SYSTEM			400,000	
F-16 SITUATIONAL AWARENESS DATA LINK UPGRADE			650,000	
C-130H3 SIMULATOR CONVERSION (UNIT LEVEL TRAINER)			2,700,000	
A-10 FUEL TANK FOAM INSTALLATION			180,000	
F-16 SOLID STATE VIDEO TAPE RECORDER			4,000,000	
C-130 SPRAY PAINT BOOTH			640,000	
ANTI-TERRORISM/FORCE PROTECTION (AT/FP) EQUIPMENT			650,000	
MISCELLANEOUS VEHICLES			73,900	
<b>TOTAL</b>	<b>\$4,954,000</b>	<b>\$75,224,000</b>	<b>\$9,943,900</b>	
Note: FY02 figures include a .69% Recission and .72% inflation adjustment				

## Table 5

## Table 5

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

[illegible]

## FY 2000 Planned vs Actual Procurements and Transfers

*NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002. Cost figures are in dollars.*

Nomenclature	FY 00 Transfers		FY 00 Procurements		FY 00 NGREA	
	Planned	Actual	Planned	Actual	Planned	Actual
AIRLIFT,C-141C	0	5				
AIR REFUELING,KC-135R	0	1				
SPECIAL OPS, MC-130E	0	5				
RESCUE, HC-130P	0	1				
FIGHTER,A-10A	0	1				
FIGHTER,F-16D	0	2				
Aircraft Modifications			120,900,000	127,200,000		
Common Support Equipment			4,597,000	13,832,000		
Law Enforcement Vehicle				74,000		
60K A/C Loader				4,437,000		
Truck, Dump			105,000	95,000		
COMSEC Equipment			1,400,000			
Intelligence Data Handling Sys			1,190,000			
National Airspace System			675,000	429,000		
Theater Air Control Sys Improvement			273,000			
AF Global Command & Control Sys			800,000	2,400,000		
Air Force Physical Security System			705,000			
Combat Training Ranges			1,125,000			
Base Level Data Auto Program				100,000		
Theater Battle Mgt C2 Sys			280,000	1,500,000		
Base Information Infrastructure			9,502,000	5,500,000		
NAVSTAR GPS Space			281,000	300,000		
CCTV/Audiovisual Equipment				500,000		
Base/ALC Calibration Package			16,000	10,000		
Night Vision Goggles			208,000	237,000		
Mechanized Material Handling Equip			200,000	125,000		
Floodlights			870,000	363,000		
Base Procured Equipment			2,366,000	3,366,000		
Photographic Equipment			24,000	200,000		
Air Conditioners			205,000	873,000		
Items Less Than \$5,000,000			3,572,000	9,891,000		
HC-130 NCALS (NVIS)					1,300,000	337,000
C-141 8.33 KHz Radios					2,000,000	
F-16 Color Multifunction Displays					3,600,000	
Scope Shield II Tactical Radios					2,000,000	
ALQ-131 Jamming POD Data Bus					700,000	2,970,394
C-130 H3 Air Training Systems					1,000,000	1,000,000
A-10 Attitude Directional Indicator Replacement					1,270,000	
HH-60 FLIR Upgrades					1,700,000	
A-10 Weather Avoidance System					600,000	
HC-130 Radar Replacement					5,730,000	5,633,951

## AFRC

Table 6

## FY 2000 Planned vs Actual Procurements and Transfers

<i>Nomenclature</i>	<i>FY 00 Transfers</i>		<i>FY 00 Procurements</i>		<i>FY 00 NGREA</i>	
	<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>	<i>Planned</i>	<i>Actual</i>
C/HC-130 Armor						2,845,500
A-10 LARS						1,148,000
A-10 Embedded GPS and Inertial Navigation (EGI)						1,800,000
F-16 ALR-69 Antenna Mod						2,201,000
Land Mobile Radio System						1,140,000
F-16D SADL Installation						170,000
C-130J-30 Support Package						500,000
HH-60 LARS						90,000
Upward Obligation (FY91) & Undistributed						61,155
Totals:			149,294,000	171,432,000	19,900,000	19,897,000



**AFRC**  
**Major Item of Equipment Substitution List**

Table 7

*NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

**TABLE NOT APPLICABLE**

**AFRC**  
**Significant Major Item Shortages**

Table 8

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service. Cost figures are reported in dollars.*

<b>PR</b>	<b>NOMENCLATURE</b>	<b>NO. REQ'D</b>	<b>UNITS SHORT</b>	<b>UNIT COST</b>	<b>TOTAL SHTG COST</b>	<b>RATIONALE / JUSTIFICATION</b>
1	WC-130 RADAR MODIFICATION	10	10	5,000,000	50,000,000	Required to correct weather radar problems
2	F-16 LITENING POD UPGRADE MODIFICATION	36	36	402,778	14,500,000	Improves system range, imaging, and processing resulting in increased capability and survivability
3	F-16 LITENING ER POD PROCUREMENT	8	8	1,775,000	14,200,000	Required to support ongoing operations and training
4	F-16 COLOR DISPLAY	72	72	161,111	11,600,000	Current display has reached max capacity and cannot fully utilize upgrades to aircraft systems
5	F-16 ADVANCED TARGETING POD PROCUREMENT	40	40	1,712,500	68,500,000	Provides improved target detection/identification and lower life cycle costs
6	KC-135R ENGINE KITS	16	16	27,000,000	432,000,000	Converts engines from "E" to "R" models. Current engines no longer meet EPA standards
7	C-5A AIRLIFT DEFENSIVE SYSTEMS	32	32	665,625	21,300,000	Provides protection against infrared-guided threat systems
8	C-5A RE-ENGINEING	32	32	3,675,000	117,600,000	Improves aircraft reliability, maintainability, and availability
9	HH-60G 200 GALLON AUXILIARY FUEL TANK	15	15	14,000	210,000	Reduces aircraft gross weight enhancing performance and survivability
10	ANTI-TERRORISM/FORCE PROTECTION EQUIPMENT	11	9	136,000	1,224,000	Provides increased efficiency for Base Defense.
	<b>TOTAL:</b>	<b>261</b>	<b>261</b>		<b>\$731,134,000</b>	

## **Chapter 6**

### **United States Coast Guard Reserve**

#### **I. Coast Guard Overview**

a) Overall Coast Guard-wide Planning Guidance: The United States Coast Guard (USCG), one of the five military services of the Armed Forces, is a unique and extremely valuable instrument of national security. As a military, multi-missioned, maritime service within the Department of Transportation, the USCG's fundamental roles are to protect the American public, the environment, and U.S. economic and security interests in U.S. waters, foreign ports, and on the high seas. Because the Coast Guard (CG) is both a maritime law enforcement agency and a military service, it provides unique capabilities and a complementary role that is increasingly relied upon by the Service Chiefs and the Unified Commanders (Combatant Commander).

A Memorandum of Agreement (MOA) between the Department of Defense (DOD) and the Department of Transportation (DOT), titled "Use of U.S. Coast Guard Capabilities and Resources in Support of the National Military Strategy", was signed by the Secretary of each Department on October 3, 1995, and amended February 27, 2001. This MOA identifies the national defense missions for the CG; among them is the mission of Port Operations, Security and Defense (POSD). Primarily an anti-terrorism/force protection (ATFP) mission, POSD is conducted at the domestic Sea Ports of Embarkation (SPOE) and the overseas Sea Ports of Debarkation (SPOD), to ensure critical ports and harbors are free of hostile threats, terrorist actions, and safety deficiencies.

POSD is based on the doctrine of port security developed by the CG to provide waterborne and limited land-based protection for shipping and critical port facilities during a military operation. Thus, POSD constitutes a strategic focus for both Major Theater War operations (MTW) and military operations other than war (MOOTW) or contingency operations. The lack of a port security capability was noted in lessons learned from Operations PROVIDE RELIEF/RESTORE HOPE (Somalia). In these types of operations, upwards of 90% of logistics sustainment for U.S. or allied forces passed through coastal ports and was potentially vulnerable to hostile actions.

b) Equipping Policy for the Coast Guard Reserve: Unique to the CG is a provision of law, found in 14 U.S.C. 712, which allows the Secretary of Transportation to involuntarily recall CG reservists to augment active component (AC) units in the event of a natural or man-made disaster. Equipment for these types of events or for normal operational surges is provided by AC CG units from existing unit inventory, from supporting units, or through contemporary procurement.

Equipment for domestic mission support is provided for within the DOT budget. The DOD funding provides for equipment necessary for the CG to perform its defense responsibilities in support of Combatant Commanders. This includes weapons systems aboard cutters, as well as communications systems that allow CG vessels to be

interoperable with the U.S. Navy (USN) and allied fleets during joint operations. Additional military equipment, for use in a combat zone, is required for Port Security Units (PSU), Maritime Safety and Security Teams (MSST), joint Navy/CG Harbor Defense Command Units (HDCU) and Naval Coastal Warfare Groups (NCWG), and Mobile Support Units (MSU). These items include small, highly maneuverable, well-armed Transportable Port Security Boats (TPSB), specialized uniforms, personal communications equipment, tents, and vehicles. In addition to procurement funds to capitalize major equipment items (e.g., small boats), the CG requires sustainment funding over the long-term for their deployable PSUs and MSUs.

Because CG reservists mobilize at AC commands as members of PSUs, HDCUs and MSUs, the CG's equipping requirements encompass both domestic emergency response and military contingency operations. In addition to the requirements for Naval Coastal Warfare (NCW) expeditionary operations, the CG has domestic military responsibilities relating to port safety and security, load-out of military cargo at strategic SPOE and response to Weapons of Mass Destruction (WMD) incidents. While CG Continental United States (CONUS) responsibilities under POSD are still being defined, force protection of high value assets and critical ports has become a major requirement. MSSTs are filling the role as the premier CONUS force protection of critical ports. The first of the many units was established in the summer of 2002, with three more to follow by summer of 2003. The MSST are active duty units with 33 reservists assigned and will be mentioned in this document only as a reference to National Security and Port Security.

c) Plan to Fill Mobilization Requirements: The training employment of CG reservists, other than those assigned to the deployable units, is through direct augmentation of AC units using equipment in the AC inventory. The deployable units include six PSUs, nine HDCUs, two NCWGs and one MSU. The MSSTs have reservists who will deploy, if needed. There were four MSSTs established in FY 2002, with two more planned for FY 2003, and 6 more for FY 2004. These deployable units are comprised of Selected Reserve (SELRES) personnel who may be involuntarily called to active duty. They train and mobilize as units.

Under 10 U.S.C. 12304, Order to Active Duty Authority, CG reservists may be mobilized when the President determines that it is necessary to augment Active forces for any operational mission. Upon full mobilization under 10 U.S.C. 12301, approximately 15% of the CG Selected Reserve would be assigned to deployable PSUs, HDCUs, NCWGs and MSUs. The remainder would mobilize to augment AC CG units at strategic U.S. ports to conduct port safety/security functions. Current operations and recent threats suggest that CG Reserve personnel providing CONUS port security will require personal protective equipment and organizational clothing equal to the number of members deploying Outside the Continental United States (OCONUS).

d) Current Coast Guard initiatives affecting RC equipment: Normally, for peacetime training, CG Reserve personnel use equipment already available at AC units. This is in keeping with the fundamental service approach under which SELRES personnel are assigned to AC units to train and augment while performing day-to-day CG

missions. SELRES personnel constitute nearly 20% of the uniformed CG strength and are a critical asset to AC units as round-out personnel for peacetime operational missions and surge resources for natural or man-made disasters.

PSUs, HDCUs, NCWGs, and MSUs are traditional drilling units for which there are no AC counterparts. The CG, through normal procurement procedures, has provided personal protective equipment to some of these units. For example, four of the six PSUs have been outfitted with Saratoga personal protective suits.

e) Plan to Achieve Compatibility with AC: CG reservists are fully integrated into the AC units. Reservists are assigned to AC units to train and augment while performing day-to-day CG missions.

## II. Coast Guard Reserve Overview

### a) Current Status of the Coast Guard Reserve

(1) Harbor Defense Command Units (HDCU): These units perform command and control for harbor defense and port security outside the continental United States in support of a Combatant Commander. These forces, among the first to arrive, are deployed during the earliest stages of a contingency to provide safe and secure ports for off-loading troops and equipment into a military theater of operations.

Each HDCU is actually a blend of approximately 35 Coast Guard Reserve (USCGR) and Naval Reserve (USNR) personnel. Of the 35 personnel, 17 are designated as Coast Guard (CG) positions. They act as the command and control element for POSD overseas. The commanding officer may be a member of the USCGR or the USNR. The HDCU has command and control over all Naval Coastal Warfare (NCW) operating units for the mission, including CG Port Security Units (PSU), Explosive Ordnance Disposal Units, Mobile Diving and Salvage Units, Inshore Boat Units (IBU) and Mobile Inshore Undersea Warfare Units (MIUW).

(2) Naval Coastal Warfare Groups (NCWG): NCWG are staff units providing both operational and administrative oversight to assigned HDCUs. Each NCWG provides a deployable command and control staff whose core competency is to provide staff support to the Naval Coastal Warfare Commander. Each of the two NCWGs is assigned 12 CG personnel.

(3) Coast Guard Port Security Units (PSU): The PSU provides the actual interdiction capability for NCW operations. Each PSU operates six Transportable Port Security Boats (TPSB). They arrive in theater with their own unit security capabilities. In the Persian Gulf War, self-sufficient PSUs were among the few rear-echelon units deployed. They also deployed detachments to the CENTCOM area of operations in response to the USS COLE incident.

In response to the events of 9-11, four of the six PSUs were deployed to protect CONUS SPODs. These deployments were the impetus for the recent creation of the MSSTs. PSUs deployed to Guantanamo Bay, Cuba, for detainee operations in support of Operation ENDURING FREEDOM.

PSUs continue to participate in numerous annual joint training exercises.

(4) The Mobile Support Unit (MSU): The MSU is an expeditionary unit equipped to provide hull, mechanical, and electrical (HM&E) logistics support to forward deployed CG 110-foot Patrol Boat (WPB) squadrons. The MSU concept was established in 1987 to deploy for Department of Defense (DOD) operations. To date, the MSU has proven its value for many peacetime and homeland defense missions including counter narcotics (FRONTIER SHIELD 1996 and FRONTIER LANCE 1998) and alien migrant

interdiction (ABLE MANNER 1994), in addition to other surge operations (SAIL BOSTON 1992, the 1996 Olympics, and OPSAIL 2000).

(5) Weapons of Mass Destruction (WMD) Response Capability: The CG is capable of responding to a WMD incident in two significant ways. First, CG On Scene Commanders (OSC) can respond at the local level in coordination with the Environmental Protection Agency or the Federal Emergency Management Agency (FEMA) as per Emergency Support Function (ESF) #10 of the Federal Response Plan and the National Contingency Plan. The OSCs will provide command and control elements only. The CG does not provide first responders. Second, the CG's National Strike Force has the capability, in its three Strike Teams (each consisting of approximately 40 reservists and 45 active duty personnel), to respond to chemical incidents. Strike Teams have been deployed in this capacity in Atlanta and Denver in support of special events.

The Coast Guard is in the process of developing a WMD Awareness Study, to identify and select appropriate sources of WMD information for all Coast Guard personnel. The study will: determine fundamental aspects of WMD threat awareness information; evaluate existing sources of WMD training and informational products; select the product or products that best fit the need for CG-wide WMD threat awareness; determine the best use of WMD training funds; and suggest implementation of a WMD threat information program.

b) Major Changes Since Last Report: The most significant change is the establishment of the Maritime Safety and Security Teams (MSST). They will provide a dedicated active duty force (71 active duty personnel augmented by 33 reservists) that possesses specialized skills, capabilities and expertise to perform a broad range of port security and harbor defense missions. Modeled after CG Port Security Units and Law Enforcement Detachments, MSSTs offer a complementary, non-redundant Coast Guard capability that will be able to close significant readiness gaps in our nation's strategic ports. MSSTs will be trained in Maritime Law Enforcement (MLE) practices and policies, enabling it to augment Coast Guard forces during major marine events, contingencies, and other Coast Guard law enforcement operations (e.g. CD and AMIO) primarily in ports, harbors, internal waterways and coastal regions.

c) Future Years' Program FY 2004 – FY 2006: Current Combatant Commander operational plans validate a requirement for all the HDCUs and PSUs that are currently available. Six PSUs are currently in operation (one each based in Virginia, Florida, Mississippi, Ohio, California, and Washington), and there is the possibility for additional PSU's. All nine HDCUs and both NCWGs are organized and trained, with very limited amounts of equipment. Five HDCUs are located on the Atlantic and Gulf coasts, with four located on the Pacific Coast. One NCWG is located on each coast.

The CG has one MSU. Stand-up of a second Reserve MSU has been considered, but has been deferred due to funding constraints.

Recent Combatant Commander Operations Plans (OPLAN) have indicated an increased need for PSU Anti-Terrorism/Force Protection (ATFP) support. In addition, the recent shift in the National Defense Strategy now calls for an even greater capability for PSUs and MSSTs to quickly respond to port security and safety contingency operations in CONUS and abroad. The CG has been working with the USN Seabee community to create a standardized loadout plan that will increase the ability of the PSU community to meet the short notice USN and DOD requests for support. Therefore, the CG plans to seek FY 2004 funding for two additional suites of PSU equipment that will be packed and ready for deployment. This would increase a PSU's ability to meet a 96-hour deployment window. Additionally, as part of the Coastal Defense and Port Security initiatives to better safeguard our nation's ports and borders from both transnational and asymmetric warfare threats, the CG must improve its ability to better respond to increased risks to national security.



Combatant Commander OPLANs cite requirements to provide port security and harbor defense capabilities in several SPODs simultaneously to support contingency operations. The total number of ports that have been determined to be important to United States defense requirements far exceeds the number of CG PSUs that are currently authorized. Although other naval elements could be employed to temporarily shore-up this deficiency, an increased number of PSUs is needed, to ensure that those critical USN resources remain available to satisfy their own primary defense requirements.

The attacks of 9-11 prompted Combatant Commanders to re-evaluate ongoing port security and harbor defense requirements. There is also an increased need for small boat operations worldwide as evidenced by the involvement of USN IBUs in Vieques, PR. These operations have demonstrated a need for this type of port security operation to be conducted during the full spectrum of naval operations. It is likely that PSU-like



capabilities will routinely be forward deployed to provide security in SPODs and logistics support nodes.

Planning for sustained operations includes having more defense resources available to conduct operations than are actually anticipated to be needed. This strategy allows for backfill and response to unforeseen contingencies. Despite aggressive training and effective management, it is unlikely that all authorized PSUs will be at the highest readiness levels to be available for operations at any given time. Reconstituting forces will be essential to sustain CG operations amidst any hostile actions. Although contingency plans have been developed to provide follow-on forces required for on-scene regular relief, there is a need for additional capacity to support significant backfill that may be required during future hostilities.

d) Shortfalls

(1) Port Security Unit Strength: In the Persian Gulf War, 100% of the CG PSU capability was deployed, leaving no backup for normal rotation of personnel/units. In response to the terrorist attacks of September 11, 2001, four of the six PSUs deployed. Continued deployment to Guantanamo Bay, Cuba, and meeting the port security rolls attribute to the strength shortfall. The Combatant Commanders War Plans have a requirement for 13 PSUs, and the Coast Guard currently has 6.

(2) Port Security Unit Equipment: The CG has identified requirements for miscellaneous equipment sets for special port security operational functions. These sets include equipment for force protection: safety; intelligence; communications; medical; Chemical, Biological, and Radiological (CBR) equipment; personnel support facilities (tents, field kitchens, Automatic Data Processing equipment, Meals-Ready-To-Eat, etc.); and associated equipment maintenance. However, to fully outfit two new PSUs in support of the POSD initiatives, both in CONUS and OCONUS, the CG requires \$6.8 million.

3) Chemical, Biological and Radioactive Equipment: CBR equipment on-hand for CG Reserve personnel assigned to the Marine Safety Offices (MSO) who have a DOD Strategic load-out responsibility are drastically below requirements. During a military load-out contingency, the current mobilization requirements call for more than 3500 Reserve personnel. In order for the CG to meet their CONUS strategic load-out port commitments, a substantial stocking of CBR Mission Oriented Protective Posture (MOPP) gear would be required for this force of over 3500 personnel.

Additionally, CBR equipment for nine HDCUs and two NCW Groups is also below requirements. MOPP gear is required to outfit this force to meet their requirements. *Table 8* depicts the current shortfalls.

(4) Mobile Support Unit Equipment: Current strategic planning in the Joint Strategic Capabilities Plan and the Unified Combatant Commanders' OPLANS obligates the Coast Guard to support operations for two complete 10 cutter squadrons. Currently,

the CG maintains one MSU capable of only supporting one squadron of no more than six Patrol Boat cutters (WPB). Limitations are due to equipment and manpower shortfalls. The CG would like to upgrade the program in order to meet its full obligation to DOD. In addition to supporting two 110-foot cutter squadrons, the MSU theoretically could support other CG standard boats if properly trained, staffed and equipped. The USN has recently funded the construction of 110-foot WPB Shipping Cradles to expediently transport CG assets out of hemisphere. This initiative has increased the likelihood that these cutters will be called upon to serve. It is imperative full funding be made available to the MSUs to ensure their readiness to fulfill Combatant Commander requirements. Current MSU equipment shortfalls are shown in *Table 8*.

e) Summary and Conclusion: The CG continues to analyze emerging missions and roles in light of recent events. Improving capabilities to meet national security requirements and optimizing resources is the challenge for the CG for the future. Having the right equipment on hand for the CG men and women to do the job safely and effectively is the challenge in this resource deficient climate. The CG has maximized its streamlining effort by optimizing its personnel resources through integration of the Reserve force with the Active force.

The CG has not received any funding through the NGRE. However, this report points out the gaps that exist between requirements and current inventories. These shortages directly impair the CG's ability to meet worldwide Combatant Commander requirements and United States national security concerns. History has shown that failure to meet force protection needs costs lives, property, and commerce to the United States and its allies.

**USCGR**  
**Consolidated Major Item Inventory and Requirements**

Table 1

*NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). \* It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.*

<b>NOMENCLATURE</b>	<b>Beginning FY 2004 UNIT</b>	<b>Beginning FY 2004 QTY O/H</b>	<b>Beginning FY 2005 QTY O/H</b>	<b>Beginning FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY O/H</b>	<b>Ending FY 2006 QTY REQ</b>
<b>Port Security Units</b>						
25' TPSB (6 per unit)	65,000	42	54	54	54	54
175HP OUTBOARD MOTOR (2 per boat/6 total spares)	7,000	130	166	166	166	166
VEHICLE, F350 PICKUP (2 per unit)	45,000	14	18	18	18	18
VEHICLE, F350 12-PASSENGER VAN (1 per unit)	45,000	7	9	9	9	9
VEHICLE, F550 STAKEBED (1 per unit)	45,000	7	9	9	9	9
RADIO, TRI-BAND (1 per boat/2 total spares)	25,000	56	72	72	72	72
RADIO, VHF/FM SPECTRA (1 per boat, 4 total spares)	3,500	70	90	90	90	90
RADIO, TRI-BAND, BASE (1 per unit/1 spare)	25,000	14	18	18	18	18
RADIO, VHF/FM SPECTRA, BASE (1 per unit/1 spare)	3,500	14	18	18	18	18
PSU EQUIPMENT PACKAGE	1,715,000	6	8	8	8	8
<b>Mobile Support Units</b>						
TRAILER, CONNEX BOX	30,000	22	23	23	22	23
TRUCK, PICK-UP	25,000	2	2	2	2	3
TRUCK, STAKEBED	30,000	4	4	4	4	4
TRUCK, TRACTOR TRAILER	105,000	2	2	2	2	2
MSU EQUIPMENT PACKAGE	213,500	0	0	0	0	1
FORKLIFT, 10,000 LB	20,000	1	1	1	1	2
GENERATOR SET 160KW & SPARE PARTS KIT	23,000	2	2	2	2	2
WELDER, GAS POWERED	3,000	1	1	1	1	2
TRAILER HEATING SYSTEM	50,000	0	0	0	0	1
<b>WMD Response Gear</b>						
LEVEL A SUITS	600	126	126	126	126	156
CHEM-BIO DETECTION EQUIPMENT	9,000	2	2	2	2	12
LEVEL A COMMUNICATIONS SUITES	30,000	0	0	0	0	3

# USCGR

## Average Age of Equipment

Table 2

*NOTE: This table provides the average age of selected major items of equipment. The average age provides a projected average age of the fleet for fiscal year (FY) 2004.*

<i><b>NOMENCLATURE</b></i>	<i><b>AVERAGE AGE</b></i>	<i><b>REMARKS</b></i>
<b>Port Security Units</b>		
25' TPSB	4	
175HP OUTBOARD MOTOR	4	
VEHICLE, F350 PICKUP	3	
VEHICLE, F350 12-PASSENGER VAN	3	
VEHICLE, F550 STAKEBED	3	
RADIO, TRI-BAND (1 per boat/2 spares)	3	
RADIO, VHF/FM SPECTRA	3	
RADIO, TRI-BAND, BASE	3	
<b>Mobile Support Units</b>		
TRAILER, CONNEX BOX	19	
TRUCK, PICK-UP	14	
TRUCK, STAKEBED	11	
TRUCK, TRACTOR TRAILER	N/A	

**USCGR**  
**Service Planned Procurements (P-1R Data)**

Table 3

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurement funds as identified in the P-1R exhibit of the FY 04 Budget Estimate Submission. Deliveries of procured equipment normally take one to two years before they arrive in the inventory; eg. items procured in FY 05 would be expected to arrive in RC inventories in FY 06 or FY 07.*

*Note: Cost figures are in dollars.*

<b>NOMENCLATURE</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>REMARKS</b>
<b>2 Additional Port Security Table of Allowance Inventories</b>				
25' TPSB (6 per unit)	780,000			
175 HP OUTBOARD MOTOR (2 per boat/6 total spares)	252,000			
VEHICLE, F350 PICKUP (2 per unit)	180,000			
VEHICLE, F350 12-PASSENGER VAN (1 per unit)	90,000			
VEHICLE, F550 STAKEBED (1 per unit)	90,000			
RADIO, TRI-BAND (1 per boat/2 total spares)	200,000			
RADIO, VHF/FM SPECTRA (1 per boat, 2 total spares)	28,000			
RADIO, TRI-BAND, BASE (1 per unit/1 spare)	50,000			
RADIO, VHF/FM SPECTRA, BASE (1 per unit/1 spare)	7,000			
PSU EQUIPMENT PACKAGE	1,715,000			
TOTAL:	3,392,000			

**National Guard and Reserve Equipment Appropriation (NGREA) Procurements**

*NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years from date of procurement before they arrive in the inventory. Cost figures are in dollars.*

**TABLE NOT APPLICABLE**

**USCGR**  
**Projected Equipment Transfer/Withdrawal Quantities**

Table 5

*NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transferred equipment is commonly called "cascaded equipment" or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services will not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.*

**TABLE NOT APPLICABLE**

**USCGR**  
**FY 2000 Planned vs Actual Procurements and Transfers**

Table 6

*NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 2000 with actual procurements and transfers. FY 2000 is selected as these are the most recent funds recent to expire. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered through the end of FY 2002.*

**TABLE NOT APPLICABLE**



**USCGR**  
**Major Item of Equipment Substitution List**

Table 7

*NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.*

**TABLE NOT APPLICABLE**

**USCGR**  
**Significant Major Item Shortages**

Table 8

*NOTE: This table provides an RC top ten prioritized (PR) shortage list for major items of equipment required for wartime missions but which are currently not funded in the FYDP. It lists the total quantity required, the total unfunded requirement, the individual item cost, and the cost of the unfunded portion. This data is consistent with other unfunded data submitted by the Service.  
Cost figures reported in dollars.*

<b>PR</b>	<b>NOMENCLATURE</b>	<b>TOTAL REQ'D</b>	<b># UNITS SHORT</b>	<b>UNIT COST</b>	<b>TOTAL SHTG COST</b>	<b>RATIONALE / JUSTIFICATION</b>
	<b>MSU EQUIPMENT</b>					
1	TRUCK, TRACTOR TRAILER	2	2	105,000	210,000	
2	TRAILER, CONNEX BOX	23	23	30,000	690,000	
3	TRUCK, PICK-UP	3	1	25,000	25,000	
4	FORKLIFT, 10,000 LB	2	1	20,000	20,000	
5	WELDER, GAS POWERED	2	1	3,000	3,000	
6	MSU EQUIPMENT PACKAGE	1	1	213,500	213,500	
7	<b>TWO ADDITIONAL PSU TOA INVENTORIES</b>	8	2	2,703,000	5,406,000	
	<b>WMD RESPONSE GEAR</b>					
8	LEVEL A SUITS	156	30	600	18,000	
9	CHEM-BIO DETECTION EQUIPMENT	12	10	9,000	90,000	
10	LEVEL A COMMUNICATIONS SUITES	3	3	30,000	90,000	
	TOTAL:				6,765,500	

## **Appendix A**

### **Program Points of Contact**

#### **DEPARTMENT OF DEFENSE**

**Office, Assistant Secretary of Defense for Reserve Affairs**  
**ATTN: OASD/RA (M&F)**  
**1500 Defense Pentagon, Room 2E217**  
**Washington, DC 20301-1500**

Ms. Patricia J. Walker  
Deputy Assistant Secretary of Defense for Reserve Affairs  
(Materiel & Facilities)  
(703) 695-1677

COL Bette R. Sayre (NGRER Editor)  
OASD/RA (M&F)  
Deputy Director, Resources and Evaluations  
(703) 693-8111  
Bette.Sayre@osd.mil

#### **UNITED STATES ARMY**

**Office of Deputy Chief of Staff, G-4**  
**ATTN: DALO-PLR**  
**500 Army Pentagon, Room 1D343**  
**Washington, DC 20301-0500**

MAJ Ronald L. Lundy  
(703) 614-4247  
Ronald.Lundy@hqda.army.mil

Mr. Dan Bernhardt (ARNG)  
(703) 607-7443  
Daniel.Bernhardt@ngb.army.mil

MAJ Ed Grube (Army Reserve)  
(703) 601-0660  
grube@ocar.army.pentagon.mil

## **UNITED STATES MARINE CORPS**

**Headquarters, United States Marine Corps  
Office, Manpower and Reserve Affairs (RAC)  
3280 Russell Road  
Quantico, VA 22134**

LtCol Jim Barich  
(703) 784-9141  
barichjd@manpower.usmc.mil

## **UNITED STATES NAVY**

**Headquarters, United States Navy  
Office: Chief of Naval Operations  
ATTN: CNO-N959F  
2000 Navy Pentagon  
Washington, DC 20350-2000**

CDR Bob Little  
(703) 601-1862  
little.robert@hq.navy.mil

## **UNITED STATES AIR FORCE**

**Headquarters, United States Air Force  
Office: Deputy Chief of Staff Installations & Logistics  
ATTN: AF/ILSP  
1030 Air Force Pentagon, Room 5A276  
Washington, DC 20330-1030**

Col Klaus Hoehna (SAF/MIR)  
(703) 693-9505  
klaus.hoehna@pentagon.af.mil

Ron Kornreich (ANG)  
(703) 607-1254  
Ronald.Kornreich@ngb.ang.af.mil

Lt Col Stewart LeBlanc(AFRC)  
(703) 697-4752  
stewart.leblanc@pentagon.af.mil

**UNITED STATES COAST GUARD**

**United States Department of Transportation  
United States Coast Guard  
Office, Director Reserve & Training  
2100 Second Street, S.W.  
Washington, DC 20593-0001**

LT Allen Balough  
(202) 267-0564  
abalough@comdt.uscg.mil

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
AAA	Anti-Aircraft Artillery	AF
AAI	Air to Air Interrogator	AF
AAO	Approved Acquisition Objective	M
AATC	Air National Guard/Air Force Reserve Test Center	AF
AAV	Assault Amphibian Vehicle	M
AAAV	Advanced Amphibious Assault Vehicle	M
AC	Active Component	All
ACC	Air Combat Command	AF
ACIU	Advanced Central Interface Unit	AF
ACS	Air Control Squadron	AF
ACTS	Air Combat Training System	AF
ACW	Air Control Wing	AF
ADI	Attitude Directional Indicator	AF
ADRS	ARNG Division Redesign Study	A
AE	Aeromedical	AF
AEF	Aerospace Expeditionary Force	AF
AEP	Army Equipping Policy	A
AETC	Air Education and Training Command	AF
AEU	Advanced Electronics Unit	AF
AF	Air Force	AF
AFB	Air Force Base	AF
AFFS	Airborne Fire Fighting System	AF
AFR	Air Force Reserve	AF
AFRC	Air Force Reserve Command	AF
AFSPC	Air Force Space Command	AF
AFSOC	Air Force Special Operations Command	AF
AIM9X	Air Intercept Missile (9X Series)	AF
AIFF	Advanced Identification/Friend or Foe	All
AIP	Anti-Surface Warfare Improvement Program	N
AKITS	Alpena Kadena Interim Training System	AF
AM	Amplitude Modulated	AF
AMC	Air Mobility Command	AF
AMCM	Airborne Mine Countermeasures	N
AMP	Avionics Modernization Program	AF, M
AMRAAM	Advanced Medium Range Air-to-Air Missile	N
AMSA	Area Maintenance Support Activities	A
ANG	Air National Guard	AF
ANGB	Air National Guard Base	AF
ANG/AQ	Army National Guard/Acquisition Directorate	A
APN	Aircraft Procurement - Navy	M
ARB	Air Reserve Base	AF
ARC	Air Reserve Component	AF
ARLOG	Army Reserve Logistics	A
ARNG	Army National Guard	A
ASCS	Airborne Sensor and Control System	AF
ATC	Air Traffic Control	A
ATFP	Anti-Terrorism/Force Protection	CG
ATLAS	All Terrain Lifter, Army System	A

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
ATLASS	Asset Tracking Logistics and Supply System	M
ATO	Assisted Take-off	AF
ATP	Advanced Targeting Pod	AF
AVCRAD	Aviation Classification Repair Activity Depot	A
AVIM	Aviation Intermediate Maintenance	A
AVUM	Aviation Unit Maintenance	A
AVLB	Armored Vehicle Launched Bridges	A
AW	Airlift Wing	AF
AWACS	Airborne Warning and Control System	AF
BES	Budget Estimate Submission	AF
BFV	Bradley Fighting Vehicle	A
BIDS	Biological Integrated Detection System	A
BLOS	Beyond Line-of-Sight	AF
BOL	Bolt On Launcher	AF
BW	Bomb Wing	AF
BY	Budget Year	All
C2	Command and Control	AF
C4I	Command, Control, Communication, Computers, and Intelligence	A
C4ISR	Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance	N
CA	Civil Affairs	A
CACS	Command and Control Squadron	AF
CAF	Combat Air Force	AF
CAM	Chemical Agent Monitors	A
CAVTR	Color Airborne Video-Tape Recorder	AF
CBMS	Common Battle Management System	
CBR	Chemical, Biological, and Radiological	CG
CBT	Common Bridge Transport	A
CBT	Computer Based Training	AF
CCIP	Common Configuration Improvement Program	AF
CCIU	Commercial Central Interface Unit	AF
CDS	Combat Development System	M
C-E	Communications-Electronics Equipment	A
CE	Construction Equipment	A
CESE	Civil Engineering Support Equipment	N
CEUCE	Common End User Computer Equipment	M
CHS	Controlled Humidity Storage	A
CID	Combat Identification	AF
CINC	Commander-in-Chief	All
CINCLANTFLT	Commander-in-Chief, Atlantic Fleet	N
CINCPACFLT	Commander-in-Chief, Pacific Fleet	N
CIS	Combat Intelligence System	AF
CMS	Countermeasures Management System	AF
CONPLAN	Contingency Plan	N
CNO	Chief of Naval Operations	N
CNS/ATM	Communication, Navigation, Surveillance/Air Traffic Management	M

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
CONUS	Continental United States	All
COTS	Commercial Off-the-Shelf	AF
CQ	Combat Quadrangle	AF
CRAG	Compass, Radar and Global Positioning System	AF
CRTC	Combat Readiness Training Center	AF
CS	Combat Support	A
CSA	Army Chief of Staff	A
CSAR	Combat Search and Rescue	AF
CSS	Combat Service Support	A
CST	Civil Support Team	AF
CUCV	Commercial Utility Cargo Vehicles	A
CUPID	Combat Upgrade Plan Integration Details	AF
CVW	Carrier Air Wing	N
CVWR-20	Carrier Air Wing Reserve Twenty	N
DA	Department of the Army	A
DAMPL	Department of the Army Master Priority List	A
DCSOPS	Deputy Chief of Staff for Operations	A
DEPMEDS	Deployable Medical System	A
DISA	Defense Information Systems Agency	All
DMT	Distributed Mission Training	AF
DOD	Department of Defense	All
DON	Department of the Navy	M, N
DOT	Department of Transportation	CG
DSCS	Defense Satellite Communications System	AF
DSMS	Digital Stores Management System	AF
DSP	Defense Support Program	AF
EAC	Echelons Above Corps	A
EAD	Echelons Above Division	A
EAF	Expeditionary Aerospace Force	AF
EC	Electronic Combat	AF
ECM	Electronic Countermeasures	AF
ECP	Engineer Change Proposal	M
ECS	Equipment Concentration Site	A
ELSF	Expeditionary Logistics Support Force	N
EMM	Engineer Mission Module	A
EMW	Expeditionary Maneuver Warfare	M
EOD	Explosive Ordnance Disposal	N
EODMU	Explosive Ordnance Disposal Mobile Unit	M
EOH	Equipment On-hand	A
EPA	Environmental Protection Agency	All
EPLRS	Enhanced Position Location Reporting System	A, AF
ERC	Equipment Readiness Code	A
eSB	Enhanced Separate Brigade	A
ESF	Emergency Support Function	CG
ESL	Expected Service Life	A
ESP	Extended Service Program	A



## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
EW	Electronic Warfare	AF
EWMS	Electronic Warfare Management System	AF
FAADC2	Forward Area Air Defense Command and Control	A
FAADC2I	Forward Area Air Defense Command, Control and Intelligence	A
FAASV	Forward Area Ammunition Support Vehicle	A
FAR	Federal Air Regulation	AF
FBI	Federal Bureau of Investigation	All
FDL	Fighter Data Link	AF
FEMA	Federal Emergency Management Agency	N, CG
FFG	Guided Missile Frigate	N
FFOV	Full Field Of Vision	AF
FLIR	Forward Looking Infra-Red	AF
FM	Frequency Modulated	All
FMT	Full Mission Trainer	AF
FMTV	Family of Medium Tactical Vehicles	A
FOC	Full Operational Capability	AF
FORCES	Force Operational Readiness and Combat Effectiveness Simulation	AF
FP	Force Package	A
FSP	Force Support Package	A
FSSP	Fuel System Supply Point	A
FTU	Flying Training Unit	AF
FTU	Formal Training Unit	AF
FW	Fighter Wing	AF
FY	Fiscal Year	All
FYDP	Future Years Defense Plan	All
GATM	Global Air Traffic Management	AF
G-FAC	Ground -- Forward Air Control	AF
GPS	Global Positioning Systems	All
GSAC	General Support Aviation Company	A
GWOT	Global War on Terrorism	All
HARM	High Speed Anti-Radiation Missile	AF
HDC	Harbor Defense Command	CG, N
HDCU	Harbor Defense Command Unit	CG, N
HEMTT	Heavy Expanded Mobility Tactical Truck	A
HET	Heavy Equipment Transporter	A
HETS	Heavy Equipment Transporter System	A
HF	High Frequency	AF
HIMARS	High Mobility Artillery Rocket System	M
HMCS	Helmet Mounted Cueing System	AF
HMDS	Helmet Mounted Display System	AF
HM&E	Hull, Mechanical and Electrical	CG
HMMWV	High Mobility, Multi-Purpose Wheeled Vehicle	A, M, N
HNS	Host Nation Support	A
HNVS	Helicopter Night Vision Systems	M
HOTAS	Hands-on-Throttle-and-Stick	AF

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
HQDA	Headquarters, Department of the Army	A
HTS	HARM Targeting System	AF
HUD	Heads Up Display	AF
IAP	International Airport	AF
IBCT	Interim Brigade Combat Team	A
IBU	Inshore Boat Unit	N
ID	Identification	AF
IDM	Improved Data Modem	AF
IFF	Identification Friend or Foe	All
IGS	Intragovernmental Solution	AF
IHFR	Improved High Frequency Radio	A
ILC	Integrated Logistics Capabilities	M
ISR	Intelligence, Surveillance, and Reconnaissance	AF
IMA	Intermediate Maintenance Activity	M
INS	Inertial Navigation System	AF
IR	Infrared	AF
IOC	Initial Operational Capability	AF
JATO	Jet Assisted Take-off	AF
JCS	Joint Chiefs of Staff	All
JDAM	Joint Directed Attack Munitions	AF
JFACC	Joint Force Air Component Commander	AF
JHMCS	Joint Helmet Mounted Cueing System	AF
JRVIO	Joint Reserve Virtual Information Operations	AF
JSCP	Joint Strategic Capabilities Plan	All
JSF	Joint Strike Fighter	M
JSTARS	Joint Surveillance Target Attack Radar System	AF
JTCTS	Joint Tactical Combat Training System	AF
JTIDS	Joint Tactical Information Distribution System	AF
JTRS	Joint Tactical Radio System	AF
JVMF	Joint Variable Message format	AF
KW	Kilowatt	All
LCAC	Landing Craft, Air Cushion	M
LANTIRN	Low Altitude Navigation and Targeting Infra-red for Night	AF
LARS	Lightweight Airborne Recovery System	AF
LAV	Light Armored Vehicle	M
LIN	Line Item Number	A
LMTV	Light Medium Tactical Vehicle	A
LSS	Littoral Surveillance System	N
LST	Newport Class Tank Landing Ships	N
LW 55	Lightweight 55	M
MACI	Military Adaptation of Commercial Items	A
MACS	Mobile Approach Control System	AF
MAFFS	Modular Airborne Fire Fighting System	AF
MAGTF	Marine Air-Ground Task Force	M

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
MAJCOM	Major Command	AF
MARCORLOGBASES	Marine Corps Logistics Bases	M
MARFORRES	Marine Forces Reserve	M
MAST	Mobile Ashore Support Terminal	N
MCCS	Mobile Consolidated Command Center	AF
MCM	Mine Countermeasures	N
MCREM-R	Marine Corps Readiness Equipment Module-Reserves	M
MCS	Modular Causeway System	A
MCS 21	Marine Corps Strategy 21	M
MCU	Multiple-Component Unit	A
MCS	Modular Control System	AF
MEDEVAC	Medical Evacuation	A
MDSU	Mobile Diving and Salvage Unit	CG
MFD	Multi-Function Display	AF
MHC	Coastal Mine Hunter	N
MHE	Materiel Handling Equipment	A, N
MIDS	Multifunctional Informational Distribution Systems	AF
MIE	Major Items of Equipment	AF
MILSTAR	Military , Strategic, Tactical and Relay	AF
MIUW	Mobile Inshore Undersea Warfare	N
MLRS	Multiple Launch Rocket System	A
MMS	Medical Materiel Sets	A
MOA	Memorandum of Agreement	CG
MOOTW	Military Operations Other Than War	All
MOPP	Mission Oriented Protective Posture	CG
MoTES	Mobile Threat Emitter System	AF
MPF	Maritime Preposition Force	N
MSE	Mobile Subscriber Equipment	A
MSO	Marine Safety Office	CG
MSU	Mobile Support Unit	CG
MTBF	Mean Time Between Failure	AF
MTC	Mission Training Center	AF
MTOE	Modified Table of Organization and Equipment	A
MTT	Multi-Task Trainer	AF
MTV	Medium Tactical Vehicle	A
MTVR	Medium Tactical Vehicle Replacement	N, M
MTW	Major Theater War	All
MUTES	Multiple Threats Emitter System	AF
NAF	Numbered Air Force	AF
NAS	Naval Air Station	AF, N
NAVELSF	Naval Expeditionary Logistics Force	N
NAVICS	Navigation Integration and Coordination System	A
NCA	National Command Authority	All
NCF	Naval Construction Force	N, CG
NCFSU	Naval Construction Force Support Unit	N
NCR	Naval Construction Regiments	N
NCW	Naval Coastal Warfare	N, CG

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
NCWC	Naval Coastal Warfare Commander	CG
NCWG	Naval Coastal Warfare Group	CG
NGB	National Guard Bureau	A, AF
NGREA	National Guard and Reserve Equipment Appropriation	All
NMCB	Naval Mobile Construction Battalion	N
NMS	National Military Strategy	A
NR	Naval Reserve	N
NRF	Naval Reserve Force	N
NSA	National Security Agency	All
NSF	National Science Foundation	A
NVG	Night Vision Goggles	A, AF
NVIS	Night Vision Imaging System	AF
O&M	Operations and Maintenance	A, AF
OCONUS	Outside the Continental United States	All
ODS	Operation Desert Shield/Storm	All
OMFTS	Operational Maneuver From the Sea	M
OPLAN	Operation Plan	N, CG
OPN	Other Procurement-Navy	N
OPTEMPO	Operations Tempo	All
ORI	Operational Readiness Inspection	AF
OSC	On Scene Commander	CG
OSD/RA	Office of the Secretary of Defense	All
OSD/RA	Office of Secretary of Defense/Reserve Affairs	All
P-1	Service Procurement Projection	All
P-1R	Service Procurement Projection - Reserve	All
P3I	Pre-Planned Product Improvement	A
PATS	Precision Attack Targeting System	AF
PCDS	Personal Computer Debrief System	AF
PDD	Presidential Decision Directive	All
PE	Precision Engagement	AF
PIDS	Pylon Integrated Dispensing System	AF
PLS	Palletized Load System	A
PMC	Procurement Marine Corps	M
POM	Program Objective Memorandum	All
POP	Proof of Principle	A
POSD	Port Operations Security and Defense	CG
PPBS	Planning, Programming, Budgeting System	All
PRC	Presidential Reserve Call-Up	All
PRESBUD	President's Budget	All
PSU	Port Security Unit	CG
QDR	Quadrennial Defense Review	AF
RAM/RS	Reliability-Availability-Maintainability/Rebuild to Standard	M
RANS	Range Squadron	AF
RBE	Remain Behind Equipment	M

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
RC	Reserve components	A
RDT	Requirement Development Team	AF
RDT&E	Research, Development, Test & Evaluation	All
RERP	Reliability Enhancement Re-engining Program	AF
RF	Radio Frequency	AF
RJ	Rivet Joint	AF
RML	Revolution of Military Logistics	A
RQS	Rescue Squadron	AF
RQW	Rescue Wing	AF
RROC	Reserve Requirement Oversight Council	AF
RRRB	Reserve Requirements Review Board	AF
RSMS	Readiness Sustainment Maintenance Site	A
RSSC	Radar Sonar Surveillance Center	N
RTC	Regional Training Center	AF
RTC	Reserve Training Center	M
RTCH	Rough Terrain Container Handler	A
RWR	Radar Warning Receiver	AF
SADL	Situation Awareness Data Link	AF
SAR	Search and Rescue	AF
SARSS	Standard Army Retail Supply System	A
SATCOM	Satellite Communications	AF
SBIRS	Space Based Infrared Radar System	AF
SELRES	Selected Reservist	All
SIGINT	Signals Intelligence	AF
SINCGARS	Single Channel Ground-Air Radio System	A
SLEP	Service Life Extension Program	M
SOPS	Space Operations Squadron	AF
SoS	System of Systems	A
SOW	Special Operations Wing	AF
SPO	System Program Office	AF
SPOD	Sea Ports of Debarkation	CG
SPOE	Sea Ports of Embarkation	CG
SPS	Self-Protection System	AF
SS I	Scope Shield I	AF
SS II	Scope Shield II	AF
STAR	Structural Augmentation Roadmap	AF
STAR-T	Super-High Frequency Tri-band Advanced Range Extension Terminal	A
STS	Special Tactics Squadron	AF
SWS	Space Warning Squadron	AF
T/A	Training Allowance	M
TAA-XX	Total Army Analysis (XX= Year)	A
TACP	Tactical Air Control Party	AF
TACS	Theatre Air Control System	AF
TADIL-J	Tactical Digital Information Link-J	AF
TADSS	Training Aids, Devices, Simulators and Simulations	A

## Appendix B

### Acronym Glossary

Acronym	Nomenclature	Service
TAIS	Tactical Airspace Integration System	A
TARS	Theater Airborne Reconnaissance System	AF
TAWS	Terrain Avoidance Warning System	AF
TCAS	Traffic Alert & Collision Avoidance System	AF
TFFT	Tactical Fire Fighting Truck	A
T/O&E	Table of Organization and Equipment	M
TOA	Total Obligation Authority	A
TOA	Table of Allowance	N
TOE	Table of Equipment	CG
TPFDL	Time Phased Force Deployment List	A, M
TPSB	Transportable Port Security Boat	CG
TQG	Tactical Quiet Generator	A
TRAINS	Threat Reaction Analysis Indicator System	AF
TWV	Tactical Wheeled Vehicle	A
UAV	Unmanned Aerial Vehicle	AF
UHF	Ultra High Frequency	AF
UFR	Unfunded Requirement	A
ULLS-A	Unit Level Logistics System-Aviation	A
ULT	Unit Level Trainer	AF
UMTE	Unmanned Threat Emitter	AF
USAF	United States Air Force	AF
USAFE	United States Air Force - Europe	AF
USCG	United States Coast Guard	CG
USCGR	United States Coast Guard Reserve	CG
USF	Unit Set Fielding	A
USN	United States Navy	All
UTD	Unit Training Device	AF
VHF	Very High Frequency	AF
VTR	Video Tape Recording	AF
WCMD	Wind Corrected Munitions Dispense	AF
WMD	Weapons of Mass Destruction	All
WPB	Patrol Boat	CG
WRM	War Reserve Materiel	AF, M, N
WRMS	War Reserve Materiel Stock	N
WST	Weapon System Trainers	AF
WTC	Weapons and Tactics Conference	AF

#### Service Abbreviations

A	Army
AF	Air Force
CG	Coast Guard
M	Marine Corps
N	Navy
All	Applicable to all Services